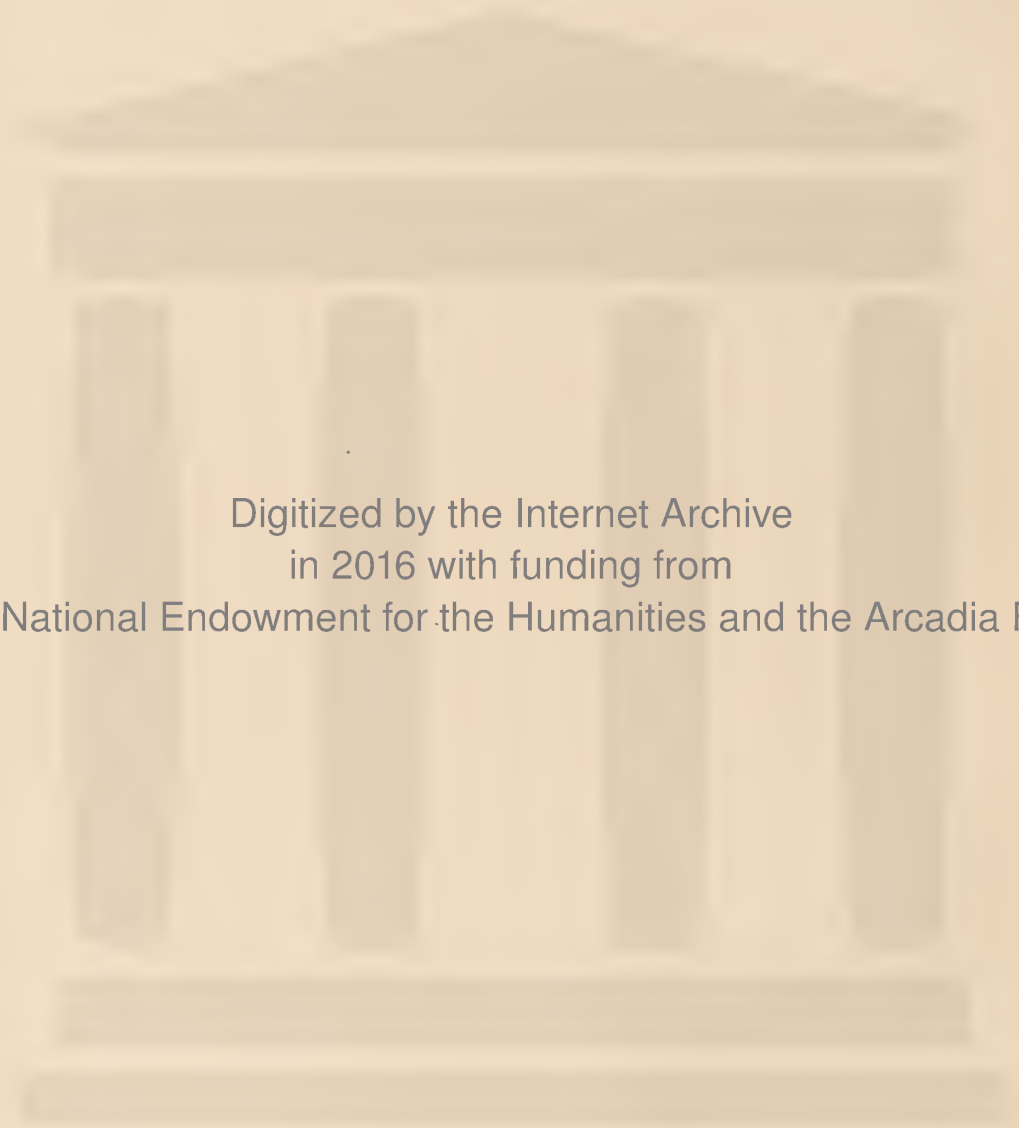
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Rhode Island Medical Journal

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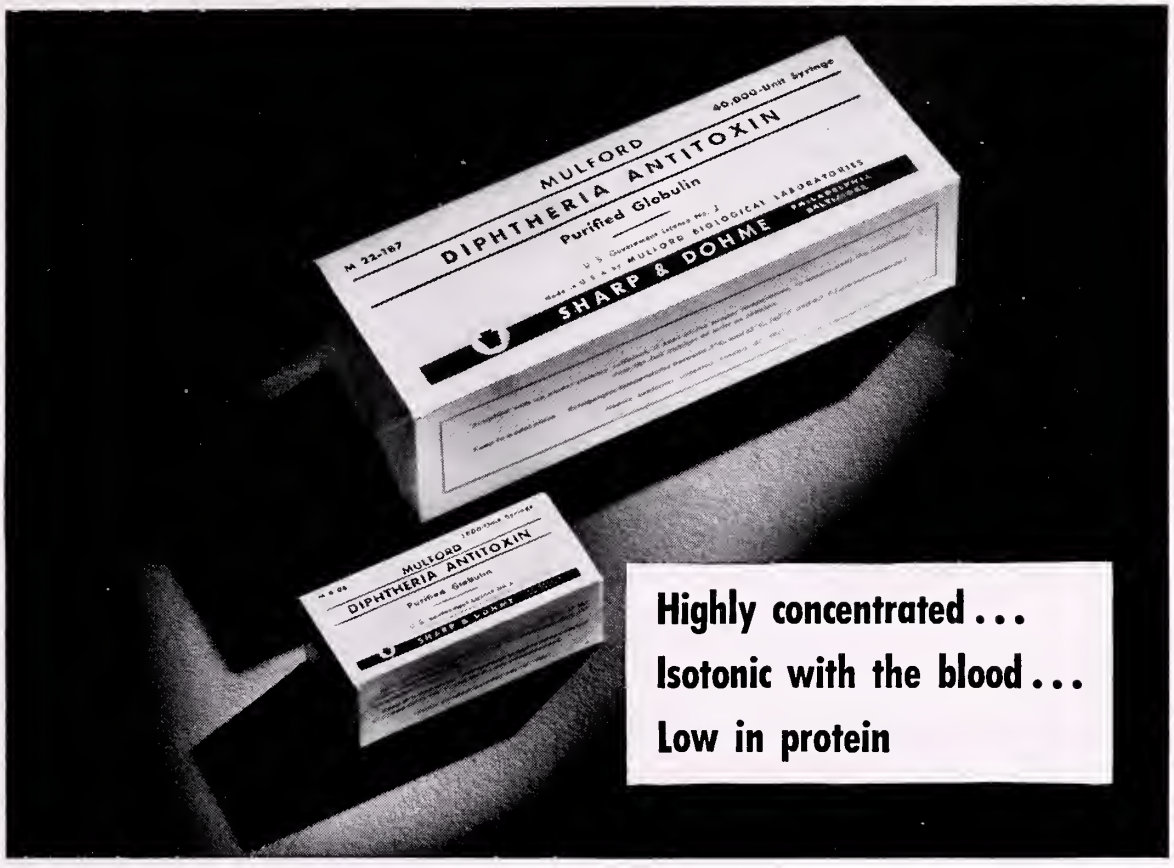
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V. Factors Affecting the Vitamin C Contents of Foods

● Recent development of the chemical method for estimation of ascorbic acid (1) has permitted more thorough study of factors determining the vitamin C contents of foods. Circumspectly used, the 2, 6 dichlorphenolindophenol or "indicator" titration method for vitamin C determination has proven an invaluable tool in this phase of research.

It is now apparent that the vitamin C content of food at the time of consumption is conditioned, first, by the initial ascorbic acid content of the food at the time of harvesting, and second, by the treatment to which the food is subjected between the time of harvesting and the time of consumption.

The initial vitamin C level in raw foods has been found to depend on factors such as variety, maturity and growing conditions (2). Under usual conditions of food crop production, such factors are only partially subject to human control. However, the factors influencing vitamin C in foods from harvesting until consumption are capable of closer regulation by man.

For example, it is known that long storage at improper temperatures adversely affects the initial ascorbic acid contents of foods. Even at refrigeration temperatures raw foods may lose substantial amounts of vitamin C during storage. Rough handling—which causes rupture of vegetable tissue—is also conducive to vitamin C loss especially when followed by improper storage. Certain metals will catalyze vitamin C destruction and even commonly used home-cooking methods are attended by losses of this essential dietary factor (2).

Briefly, preservation of vitamin C in foods between harvesting and consumption is essentially a problem of preventing or reducing oxidation, either enzymatic or atmospheric. In addition, physical or solution losses must be minimized in preparation of the food for the table. It is pertinent to note that modern commercial canning procedures are well adapted to control both these chemical and physical losses of vitamin C (3).

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(1) 1932. Ztschr. f. Untersuch. d. Lebensmitt. 63, 1.
1933. J. Biol Chem. 103, 687.
(2) 1938. J. Amer. Med. Assn. 111, 1290.
(3) 1932. Ind. Eng. Chem. 24, 650.
(4) 1938. J. Amer. Med. Assn. 110, 650.
1937. Bull. 19-L Nat'l. Canners Assn., Washington, D. C., 4th Ed.

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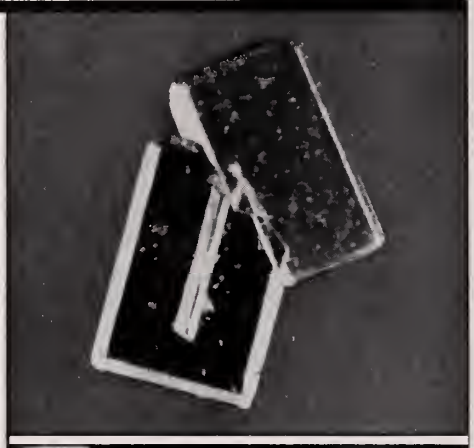
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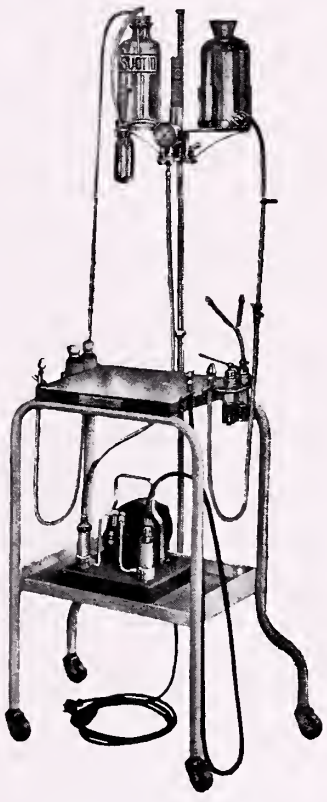
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THE RHODE ISLAND MEDICAL JOURNAL

VOLUME XXII JANUARY, 1939 NUMBER 1

EARLY VERSUS LATE OPERATIONS IN ACUTE CHOLECYSTITIS

ANTHONY V. MIGLIACCIO, M.D.
196 BROADWAY, PROVIDENCE

Waltman Walters of the Mayo Clinic, in discussing a paper on acute cholecystic disease in 1937, stated that "In the last four years the point of view of many surgeons in the United States has changed in regard to the propitious time for operation in cases of acute cholecystitis." Ever since the subject was discussed at the meeting of the American Surgical Association in 1933 we have been slowly but surely undergoing a tremendous change in our attitude towards the acute gall bladder; however, the subject is far from being settled and the closest of scrutiny is still necessary before the many controversial aspects of this problem can be considered settled.

Many extensive statistical reviews can be found in the surgical literature of the past four years. It is the purpose of this discussion to review several of these, and also to present for your critical analysis a summary of the work which has been performed in our hospital. Our small series is of unusual value in that it presents the results obtained in a general hospital, where the work is performed by a fairly large group of surgeons, of varying opinions, on what may well be considered as a whole, the poorest and sickest patients in our state. Many of these patients, either because of their own stubborness or because of the conservative attitude of the general practitioner who first saw them, are sent to the hospital long after the onset of their illness.

It seems wise at this time to call to your attention the fact that in acute cholecysitis as in acute appendicitis we have many degrees of involvement, varying from simple catarrhal inflammation to gangrene and perforation. One rather fortunate feature of gall bladder perforation is that it is more apt to remain localized than is appendiceal perforation, otherwise inflammation of either organ will run through the same cycle. Because of this analogy many have asked—why temporize in the acute gall bladder and operate immediately in the case of the acute appendix?

Before considering the problem of early versus delayed operation and of cholecystectomy versus cholecystostomy let us review and compare the results obtained at the Rhode Island Hospital.

During the five year period 1933-1937 inclusive, 113 ward patients were admitted in whom a diagnosis of acute cholecystitis could be justified. In this group there were 31 (27%) males and 82 females. The youngest patient was 7 and the oldest 79. There were a total of 11 deaths, equivalent to 9.7% of entire series.

TABLE 1
AGE

Age	*No. of Cases*	*Percent*
1-9	1	0.8
10-19	2	1.7
20-29	14	12.3
30-39	23	20.2
40-49	23	20.2
50-59	28	24.6
60-69	16	14
70-79	6	5.2

The symptoms and physical findings were as follows:

(1) PAIN: This was present in all cases. Descriptions of the location varied but usually the pain was localized in the right upper quadrant and was very sharp and persistent. At the onset of the illness, the pain, when the stone is impacted in the cystic duct, can be located in the mid epigastrium.

(2) VOMITING: There was no vomiting in 37 cases or 32% of series. The vomiting also varied from moderate to persistent and continuous.

(3) NAUSEA: In 10% of the 37 cases in which there was no vomiting the patient complained of feeling nauseated. Thus we see that in 27 cases or 23% of series there was neither nausea nor vomiting.

Read at the Second Reunion of Former Internes of the Rhode Island Hospital, Providence, September 9-10, 1938.

(4) Tenderness: Only 8 cases or 6½ of series did not present this sign. The degree of tenderness varied from mild to excruciating.

(5) Spasm: In 28 cases or 24% of series this sign was not discernible. Variation here was from one extreme to the other.

(6) Mass: A mass was definitely palpable in only 14 cases or 12% of series. In another 5 cases there was a question of whether a mass could or could not be felt. However, we must remember that tenderness and spasm may have prevented the palpation of a mass in other cases.

(7) Jaundice: Jaundice was present in only 10 cases or 9% of the series.

Table 2
Temperature on Admission

Temperature	*No. of Cases*	*Percent*
97-98	8	7
98-98.8	29	25.5
99-100	31	27.2
100-101	21	18.4
101-102	12	10.5
102-103	7	6.1
103-104	4	3.5
104-105	1	0.8

In 68 cases or 60% of the series the temperature on admission was below 100. In 37 cases or 35% of the series the temperature was normal. In only 5% of the cases was the temperature above 100.

Table 3
Pulse on Admission

Pulse Rate	*No. of Cases*	*Percent*
Below 80	29	25.5
81-100	43	37.8
101-120	30	26.4
121-140	11	9.6

Table 4
White Blood Count

White Blood Count	*No. of Cases*	*Percent*
No Report	14	12.3
6,000-8,000	6	5.2
8,000-10,000	15	13.2
10,000-15,000	38	33.4
15,000-20,000	20	17.6
20,00 and over	20	17.6

The highest count in this series was 38,800. The differential count showed a marked preponderance of polymorphonuclear leucocytes.

The history revealed that 45 cases or 40% of the series did not have a history of previous attacks. In the remaining 60% repeated attacks had been experienced from 3 months to 30 years previously.

The duration of the present attack before admission to hospital brings to light the fact that the general tendency of the physician is to treat the patient at home for as long as possible. The fallacy of this mode of treatment will be discussed later.

Table 5
Duration of Attacks Before Hospitalization

	No. of Cases	*Percent*
1-12 hours	14	12.3
12-24 hours	7	6.1
1-2 days	15	13.2
2-3 days	13	11.4
3-4 days	14	12.3
4-5 days	13	11.4
5-6 days	7	6.1
6-7 days	11	9.6
Over 7 days	19	16.7

Note here that only 21 cases or 18½% of series were hospitalized within twenty-four hours of the onset of the illness and that in 64 cases or 56% of series hospitalization was delayed for three or more days. In order to further understand the reason for this recent upheaval in the treatment of acute cholecystitis, let us examine the following table on the complications of this malady.

Table 6
Complications of Acute Cholecystitis

CLINIC	No. of Cases Oper. on	Condition of G. B. at Oper. Gangrenous No. of Cases	%	Perforated No. of Cases	%	Mortality No. of Deaths	% of Cases
R. I. Hospital	83	16	19%	8	10%	9	10.8%
Mayo	76	20	26%	16	21%	3	3.9%
Kunath	90	5	5.6%	23	22%	5	5.6%
Cinc. Gen. Hosp.	89				20%	16	18.7%
Old N. Y. Hosp. 1922-32 (inc.)	106				21%	37	34.7%
New N. Y. Hosp.	153	40	26%	16	10.5%	19	12.5%

In acute cholecystitis, Judd and Phillips report gangrene or perforation in 13.4%, Zinningers in 20.5% and Morris Smith in 22.4%. In the Rhode Island Hospital series there was gangrene or perforation in 29%. A review of most series will show an average of 20% of gangrene or perforation in acute cholecystitis.

In comparison with appendicitis it might be of interest to know that at the New York Hospital in a series of 1000 consecutive appendectomies of which 407 were chronic and 593 acute, there were 104 cases of perforation, represented 17.5% of the

acute cases. During the same period the incidence of perforation of gall bladders equalled 15.7% of the cases of acute cholecystitis.

When one considers these figures it is no wonder that early operation begins to receive its due attention in gall bladder surgery just as it has in surgery of the appendix. Gangrene and perforation with the inevitable associated high mortality is but one of the drawbacks to waiting, once the diagnosis of acute localized cholecystitis has been made.

Cholecystectomy, the procedure of choice, cannot be performed if the operation has been delayed so long that edema and other acute inflammatory processes have so obscured the anatomy that the patient's life is jeopardized if such a procedure were carried out. In these cases the surgeon is compelled to do a simple palliative cholecystostomy.

Kunath shows the objections to cholecystostomy when he reports, "in 42 cases in which a cholecystostomy had been done for acute cholecystitis that in only 40% was the relief permanent while in another 40% there was a recurrence of symptoms in from one to three months." The remaining 20% of the cases did not get even temporary relief. 17% of these cases had to be reoperated upon. He concludes from his study, "that possibly if the cases were followed for a 10-year period that the percentage of cases obtaining permanent relief from cholecystostomies would be much lower than 40."

Other objections to this procedure are: (1) high incidence of post-operative incisional hernia — (19% in Kunath's series); (2) Long duration of bile drainage usually from 2-12 weeks with an aver- of 5; (3) Reoperation is made more difficult and more dangerous.

In spite of this, all of us will readily admit that there are many cases in which cholecystostomy is and has been a life saving procedure, but our duty, if the present figures and opinions are correct, is to see that the number of these cases is reduced. At present there are too many acute cases being kept in bed at home in the hope that the infection will subside. If this should happen we feel that we have accomplished something—but have we, and if so at what price?

In order to evaluate this, let us consider what happens to the cases which are not submitted to immediate operation. We have seen how some go on to gangrene and perforation while others are moribund and inoperable on admission (two cases in our series).

In the Mayo series reported by Wesson and Montgomery 76 out of 87 cases were submitted to immediate operation. In the other 11 cases operation was deferred for various reasons. Of the 11 cases in which immediate operation was not performed 4 had to submit to operation because of recurrence of symptoms. Another patient who had refused operation died within one week. Three patients were not followed and the last three could not be operated on because of existing conditions.

In Kunath's series, 49 cases out of 103 were treated conservatively and in this group were 17 or 35% whose symptoms failed to subside and who were by necessity subjected to operation in an acute stage of the disease. It is this group that carried the high mortality, the high morbidity, the greatest number of complications and the greatest number of hospital days.

In our series of 113 cases there were 30 cases or 26.4% of the series in which for various reasons no operation was performed.

Two of these cases died soon after admission;
Two patients were too old (74 and 78);
One patient was too obese;
One patient had severe diabetes;
The remaining 24 cases were very mild.

TABLE 7

DATA	Immed. Oper. (24 hours or less after admission)		Delayed Oper. (Average delay 9 days Extremes—11½-44 days 24 or more after admission)		Total	
Number of Cases	37 or 44.4%		46 or 55.6%		83	
	No.	%	No.	%	No.	%
Cholecystostomy	19	51.3	20	42	39	46.8
Gangrene	8	21.6	7	14.7	15	18
Perforation	2	5.4	6	12.6	8	9.6
Deaths	3	15.6	2	10	5	13
Cholecystectomy	14	37.8	23	48.3	37	44.4
Gangrene	0		1	2.1	1	1.2
Perforation	2	5.4	0		2	4.4
Deaths	1	7.1	1	4.3	2	4.4
Cholecystostomy & Choledochostomy	1	2.7	1 (4 days)	2.1	1	1.2
Deaths	0	0	0	..	0	....
Cholecystectomy & Choledochostomy	2	5.4	2 (3 & 11 days)	4.2	4	4.8
Deaths	0	0	0		0	..
Cholecystectomy & Drainage Head of Pancreas	1	2.7	0	.	1	1.2
Deaths	1 (14 days p.o.)	100	0	..	1	100
Total Mortality	6	16.2	3	6.3	9	10.8

Examination of Table No. 7 will show what happened to the 83 surgical cases in this series. Sixty-one or 73% of surgical cases were found to have stones in the gall bladder. In many of these a stone

was found impacted in the cystic duct and causing obstruction which, superimposed upon the already existing infectious process in the gall bladder, added another serious pathological factor to the situation.

Study of this table presents many interesting facts:

1. Cholecystostomies predominate in the immediate group while cholecystectomies are a little more common in the delayed group.
2. Gangrene or perforation were present in 50% of the immediate and 65% of the delayed group.
3. The death rate was 16% in the immediate group and 6% in the delayed group but here it is necessary to remember that the former group represents the sickest patients in this series.
4. Even though there had been an average delay of 9 days in the delayed group the incidence of cholecystostomy was only reduced 9%, from 51% to 42%. Combine with this the fact that several of the cholecystectomies were performed on cases in which an acute process was still present and you realize that the delay was of help in less than 25% of the cases in the operative group and this 25% represents probably the mildest cases, which could have been submitted to immediate surgical intervention with little or no greater risk. That this statement is true was definitely proven by Heuer who in 1937 reported a series of 153 cases of acute cholecystitis in which cholecystectomy was performed in 138 cases and cholecystostomy in 15 cases with a total mortality of only 3.2%.

Thus we see that the price paid for the delay in surgical intervention, whether due to the conservative attitude of the doctor outside or inside the hospital, does not warrant the delay. Complications in the cases of acute cholecystitis are serious and can be prevented only by operation at the earliest possible moment. Operation in the early stages not only is less dangerous but can be complete rather than palliative. Let us, then, do all in our power to impress both the laity and the profession with the necessity not only for early hospitalization but also for early operation.

Conclusion

One hundred and thirteen cases of acute cholecystitis are presented, with a summary of the signs, symptoms and outcome. 74% of the cases were treated surgically and 25% conservatively. The mortality rate was 9.7%. Operative mortality rate was 10.8%. Early hospitalization and operation seem to offer hopes for better results in the treatment of acute cholecystitis.

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THE ROLE OF THE PATHOLOGIST IN THE CANCER PROBLEM

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The chief role of the pathologist in the cancer problem is to aid in diagnosis. He may also be able to give information that will help determine the choice of treatment and, at times, can throw some light on the prognosis.

Diagnosis

It is true that certain kinds of cancer, even in an early stage, have very definite and constant characteristics that are discernible clinically. Such tumors can be diagnosed by the clinician with a high degree of accuracy. An example is the common rodent ulcer or basal cell epithelioma of the skin. In a second group of tumors which are not accessible for either clinical examination or biopsy we are largely dependent for diagnosis upon x-ray examination. This is especially true of tumors of the gastro-intestinal tract, the lung, the kidneys and the bones. There remain, however, a number of lesions which clinically may or may not be cancer, concerning which accurate and final diagnosis can be made only by pathologic examination or biopsy. This has become increasingly true during the last few years because of the increasing emphasis upon early diagnosis. Generally speaking, a cancer in which the clincal findings are so definite that accurate diagnosis is possible is not an early cancer.

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Biopsy

The biopsy is universally accepted as the most accurate and specified method of tumor diagnosis. The idea that biopsy stimulates tumor growth or tends to increase metastasis has been largely disproved. Wood, in a study of 673 tumor-bearing rats, found no increase in growth or metastasis in the biopsied group over the control group. Simpson reviewed 7000 patients and could observe no ill-effect of biopsy. At the Curie Institute in Paris, 825 patients with carcinoma of the lip were biopsied with no evidence of harm.

Such danger as there may be lies in unnecessary manipulation by the surgeon in removing the specimen. I have, for example, observed operations where several minutes of pushing, pulling and manipulating were consumed in removing a small nodule from the breast.

A safe method is swift and clean excision with a sharp knife. If visible and small the suspicious area should be entirely removed with a surrounding rim of normal tissue. If too large, a portion only is removed, if possible from the margin. Trauma from manipulation must be avoided. Many prefer the electro-surgical method. If this is used the specimen must be larger because the external portion will be so charred that it is useless for histologic study.

Aspiration biopsy has been developed at the Memorial Hospital in New York, where it has proved very helpful. Because it requires especial skill on the part of both the surgeon and the pathologist it probably will not come to be generally useful.

The bronchoscope, proctoscope, cystoscope and the uterine curette make it possible to secure biopsy specimens from the corresponding parts of the body.

Regardless of the method, skill and judgment must be used in selecting the portion removed. Failure to find tumor in a fragment of tissue removed from the vicinity of a tumor cannot, with justice, be considered a fault of the pathologist, nor of pathology.

Not infrequently it is desirable to have the pathologist present in the operating room for immediate or frozen section diagnosis. If malignancy is found, the radical operation or application of radium may then be completed at once. Those who fear that biopsy stimulates tumor growth or increases metastasis feel that this decreases that danger. As already mentioned we do not believe this is important. Much more important is the fact that delay in treatment, with or without biopsy, is dangerous. Probably the more important reasons are the practical ones of lessening the patient's hospital stay and subjecting him or her to only one operation instead of two with the resulting demands on the time and effort of the surgeon and assistants, the anesthetist, the operating room personnel and the hospital.

Treatment

The decision as to whether or not a suspected lesion is malignant, of course does much to determine the treatment. The findings of the pathologist also help in the choice of treatment within the malignant group. The mere classification of the cancer on the basis of its cell type, in many cases, determines whether the treatment shall be surgery or radiation. For instance it is now universally agreed that the group of malignant lymphomas, of which Hodgkin's Disease is the commonest example, is always to be treated by radiation, while the common mixed tumor of the parotid gland is usually best treated by surgery. Even within a single group of tumors histological study may help to determine which ones may be expected to respond well to radiation and which ones poorly. It might be well to point out that there is a distinction between radio-sensitivity and radio-curability. For example, the malignant lymphomas, as already mentioned, are very sensitive to radiation. The tumor masses may be expected to melt away with relatively small doses of x-ray or radium. Indeed this response is so prompt and so characteristic that it is of considerable diagnostic value. Yet such cases are rarely, if ever, cured. On the other hand, the common rodent ulcer or basal cell cancer of the skin responds less promptly and requires larger dosage, but a definite cure may be expected.

With the rapid improvement in x-ray and radium treatment, types or grades of tumors formerly thought to be radio-resistant are being made to respond, and the value of estimations as to radio-sensitivity by the pathologist is correspondingly lessened.

Prognosis

Here again accurate classification of the tumor on the basis of cell type is of considerable prognostic significance. Some types of malignant neoplasms are never cured. Some other types are usually cur-

able. Of recent years much has been heard of the histological grading of cancer as a basis for prognosis. There can be no doubt that the degree of differentiation as determined by microscopic study, does parallel rapidity of growth and in less degree the ability to metastasize. This does have a certain bearing on prognosis but is overshadowed by other factors, such as the part of the body involved, the duration of the disease, the extent of the local growth, and the presence or absence of metastasis. It is my opinion that histological grading of malignancy has not proved to have the prognostic value that was hoped for it. Probably no other single factor has so much prognostic significance as the presence or absence of metastasis. Occasionally, when the pathologist has an opportunity to study the regional lymph nodes, as in the specimen submitted following radical mastectomy, the presence or absence of tumor cells in these lymph glands is of decided prognostic value.

In conclusion, it is well to remember that every laboratory report is to be evaluated in the light of the history and the clinical findings. It is our opinion that the final decision concerning diagnosis, choice of treatment and prognosis is best arrived at in the light of the findings and opinions of the clinician, the roentgenologist and the pathologist; freely expressed and frankly discussed. Any attempt either to overemphasize or to belittle any one of the three can hardly be called cooperation.

THE ROLE OF THE RADIOLOGIST IN THE CANCER PROBLEM

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The word "radiologist" just used by our chairman probably sounds strange to the ears of many in the audience, particularly of the older generation. In fact I started my own work in this specialty at a time when I had never heard the word, which has come into medical good use only within the past 15 or 18 years. A Radiologist is obviously one who specializes in Radiology, which is defined as "that branch of medical science which deals with the use of radiant energy in the diagnosis and treatment of disease." Tonight we are concerned only with the use of X-rays and Radium in connection with the cancer problem.

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You have already listened to the pathologist, whose contact with this problem is largely on the diagnostic side. You have also heard from the surgeon and the gynecologist, whose concern is largely with the therapeutic aspects of cancer. The radiologist however deals with both the diagnosis and the treatment of cancer, in essentially equal proportions. It is hard to say which part of the radiologist's efforts is the more important. This evening, in the short time available, I can only hope to give you a very brief survey, and will merely touch upon a few of the more important aspects in both the diagnosis and the treatment of malignant disease.

The development in the use of x-rays, particularly in the past 25 years, has completely changed not only the diagnostic approach to cancer, but the entire outlook with respect to prognosis and treatment. A generation ago internal cancer was only diagnosed on a clinical basis, and only those cases which were well advanced and generally terminal were recognized as cancer. Since that time, improvements in x-ray methods and technique have resulted in pushing back the threshold of early diagnosis further and further.

In the alimentary canal the use of x-rays has made it possible to diagnose cancer of the esophagus, stomach, small intestine and colon with increasing accuracy and satisfaction. Improvements, such as study of the mucosal pattern and examination with the addition of insufflated air, have all combined to make the diagnosis more accurate. The addition in recent years of endoscopic methods such as esophagoscopy and more lately gastroscopy has added improvements to the purely x-ray methods, but they do not as yet offer any substitute. By and large the diagnosis of cancer of the alimentary tract is still dependent fundamentally upon the x-ray method of investigation. In spite of all the refinements that have been developed however, the extremely early diagnosis of such cancers is still impossible. Only recently McCarthy of the Mayo Clinic estimated that 75% of the gastric cancers seen at that institution are still hopelessly advanced.

In thoracic cancer the use of x-rays has again been the chief element in advancing our knowledge of such tumors. Here likewise the careful x-ray study of the chest, both fluoroscopically and by means of films, is the foundation of the diagnostic attack. Here also bronchoscopy is extremely useful and in many instances offers the means for making the final differentiation. In general however it is still the x-ray examination which detects the pulmonary abnormality which may be further investigated by endoscopy. What I have said of course relates largely to primary cancer of the lung. With respect to metastatic cancer, we are dealing with a similar problem. The x-ray examination has become an indispensable factor in recognizing chest metastases before operating, in such cases as cancer of the breast and bone sarcoma. Other types of chest malignancy such as lymphoma are dependent very largely upon x-rays for their detection.

In cancer of the urinary tract the entire modern development of urological diagnosis has been closely tied up with the development of x-ray methods, chiefly those of urography. Originally limited to the retrograde filling of the ureters and renal pelves with opaque solutions, the examination in more recent years has been supplemented to a very enormous extent by the development of excretion methods after the intravenous injection of iodine compounds. Here again while the x-ray examination is an absolute essential in the diagnosis of renal cancer, the diagnosis cannot be called early. Real early cancer of the kidney does not cause deformity in the contours of the internal cavities. Consequently when we are able to recognize such deformities, the tumors are essentially well-advanced, although often still operable.

Malignant disease of the bones is another important group where x-ray examination is of fundamental importance. Here also we are concerned with the two types, the metastatic and the primary tumors. The metastatic form is often recognized only by such complications as fresh fracture. Again many cases of internal cancer are only detected when metastases are found in some of the bones, on routine examinations for other purposes.

Accurate diagnosis of the various types of primary bone sarcoma has also been made possible only by the more widespread and earlier use of the x-ray examination. In some clinics more emphasis has been placed on the study of serial x-ray films than upon the bone biopsy.

In most neurological clinics today, whenever a diagnosis of brain tumor has been made, the x-rays are used to search for a possible primary focus for such tumors, before proceeding with surgery. It is much less disturbing to find such foci before rather than after brain surgery. The commonest primary sites are in the lungs, kidneys or alimentary tract, all of which are readily accessible to x-ray investigation.

So much in general for the use of x-ray methods in the diagnosis of cancer. With regard to the matter of treatment, we have already heard tonight that modern cancer treatment is limited to the use of surgery, x-rays and radium. The last two form the province of the radiologist's work. In most communities both agents are handled by the radiological specialist. In some places his efforts are limited to x-ray treatment, while radium is applied by the clinician in the various specialties. Fundamentally it makes very little difference which system is in use, so long as the agents are applied by one who has the proper training, experience, and skill. As you have been told by the two previous speakers, the general tendency in the treatment of many types of cancer, particularly in the mouth and in the uterus, has been in the direction of limiting the purely surgical attack and increasing the application of radiation methods.

The effects of treatment with x-rays and radium as you probably know are the results of the essentially destructive power of these agents when applied to growing tissues. This destruction of the tissue cells is proportional to the amount of radiation absorbed by the tissues and also is proportional to the embryonal character of the tissues. The more primitive and undifferentiated the cells are, the more sensitive they are to radiation. Conversely the more highly organized the tissues are the more resistant they become to either x-rays or radium. These facts are utilized in tumor treatment, and upon them is based the desirability of biopsy examination as a preliminary to radiation treatment. The more malignant types of tumor, with actively dividing and more embryonal types of cells are generally more easily destroyed by rays than normal tissues.

The tendency in radiation treatment in the past few years has been to increase the amount of actual rays absorbed by the tumor cells so as to produce a lethal action. The problem has been to concentrate enough rays in the cancer to kill off the malignant cells without destroying the surrounding normal

tissue beyond the capacity for repair. This has not always been easy, but the development of cross-fire with x-rays, the improvement of filtration, and more recently the long-continued treatments after the method of Coutard, have helped in the solution of this problem. The last-named method is also known as the protracted or fractionnated method of treatment, and consists essentially of repeated relatively small doses of high voltage rays which bombard the malignant tissues from various angles in a sufficient amount to eventually destroy the more sensitive malignant cells. At the same time, the intervals of rest between the doses are sufficient to permit recovery of the neighboring normal tissue cells. Theoretically this sounds very simple, but in practice the problem is extremely difficult in certain locations and with certain types of tumor. These modern long-continued methods last anywhere from three to six weeks with daily treatments, and often twice daily. There are of course increased local and constitutional reactions, but at the same time there is increased effect in stopping the development of the cancer, which is the primary problem. Originally these methods were applied only to cancer of the upper respiratory tract, but eventually they have been used in the treatment of malignant tumors in every part of the body.

As for the radiologic treatment of cancer of specific organs, I can only discuss a few subjects in a very limited way. You have already heard from Dr. Chase and Dr. Waterman with respect to the treatment of oral cancer and pelvic cancer in women. I will touch on a few of the more important groups of cancer in other locations, and will say a word first about the matter of cancer of the breast. In the past few years there has been considerable discussion and controversy about the wisdom or lack of necessity of either preoperative or postoperative radiation. Gradually however the value of this radiation has been impressed upon most surgeons, so that today in most clinics radiation treatment is being used more and more. To my mind however the most important factor in connection with treatment of cancer of the breast is the surgeon's point of view with respect to what constitutes real operability. The term "operable" has been used very loosely in many places, and has varied tremendously. In the past, many cases of supposedly early cancer of the breast were found shortly after radical operation to have already had distant metastases either in the bones or chest, which were detected by eventual x-ray examinations. Today a preliminary x-ray examination of the chest and major part of the osseous system is regarded as a necessity before operation even in cases which clinically appear to be in the first stage. Again in the borderline cases, those with axillary glands, and those with extensive local development around the tumor itself, there is a tendency today to limit treatment in such cases to purely radiation methods rather than surgery first and radiation afterwards. In other words, the chances for prolonging life and comfort in such cases seem to be better if no surgery is used at all.

In cancer of the kidney, radiation treatment before surgery has been developed in the past few years, chiefly by the efforts of Waters. He has shown that many of the sensitive cancers will shrink enormously in size under x-ray treatment, making the subsequent operation simpler and the chances of arrest much greater. Here however reliance upon x-rays alone is very dangerous. Delay in surgical removal may spell the difference between long arrest and rapid recurrence.

With bone sarcoma, the sensitive types, such as Ewing's tumor, react very quickly and favorably to x-ray treatment. Here again there may be a temptation to treat the lesion with x-rays alone in order to avoid amputation. Geschickter has recently reviewed the figures and has shown that there is not a single case on record of cured bone sarcoma, of whatever kind, unless amputation was a part of the treatment, regardless of whether rays were used or not.

I shall mention only one other type of tumor, to speak of its universality, and that is malignant lymphoma. Within recent years the enormous frequency of this tumor has been increasingly forced upon our attention. In this part of the country particularly, malignant lymphoma must be considered in the differential diagnosis of tumors of practically every organ, including thoracic and abdominal viscera, as well as every bone in the body. In these cases, the response to small doses of x-rays constitutes an important diagnostic as well as therapeutic agent. The characteristic rapid shrinking under radiation will make the diagnosis clear even when the subsequent pathological examination of some excised gland may give equivocal information. In many of the cases of lymphoma that are limited to either single viscera or single bones, x-ray treatment alone has been sufficient to produce an arrest for many years. In other cases where accessible, removal of the single focus surgically has accomplished the same results.

I will now speak of a few of the modern trends in radiation treatment that are important to bear in mind in connection with the entire problem of cancer treatment. In the first place there has been considerable publicity about the matter of increased high voltage or supervoltage. You hear about the development of machines capable of operating at 400,000 and 500,000 and even 1,000,000 volts. Various claims often of a sensational nature are advanced for the supposed superiority of these methods as compared with the conventional methods of high voltage treatment. It is true that the development of high voltage in the past has been responsible for many of the improvements in the x-ray attack upon cancer in general. As mentioned before this was due to the possibility of greater concentration of lethal doses of rays in the depths of tumors with less damage to the skin and surrounding normal tissues. Theoretically, with increased voltage the possibility for such concentration also increases. However, we are able to produce essentially the same results with the generally employed high voltages by making changes in distance, filters, etc. The newer machines on the other hand can produce these results more easily and in a shorter period of time. The entire matter is still under careful investigation, and it will take some years with a careful follow-up of many cases before we know whether x-ray treatment of cancer in the future is to be done with supervoltages or with the medium high voltages.

Another important trend is the spread of x-ray treatment as a supplement to regional treatment with radium. This applies to radium treatment in the cervix, in the body of the uterus, in the rectum, prostate, and particularly in oral cancer. In most clinics, cancer in these parts is treated by both radiation methods, the x-rays supplementing the radium, and being directed particularly to the less accessible cancer in the lymphatic distribution.

More recently this trend has extended to a point whereby purely x-ray methods are beginning to supplant the local use of radium. This is taking place especially in cancer of the cervix, rectum and mouth. The methods are along two main directions. The first of them is the Chaoul system, devised in Germany, and consisting of a contact method with very low voltage x-rays. This originated purely as a matter of economy when there was not sufficient money to obtain adequate amounts of radium. Under the circumstances new x-ray tubes were developed which produced large amounts of radiant energy, applied directly to the surface of the tumor or within a few millimeters. These tubes were easily applied in body cavities, as well as to external skin cancer. The simplicity of this system, the short time required for each daily treatment, and the general economy have made it a very attractive method. The results of this treatment, which has been in use for about four years, seem very favorable as compared with local radium methods, and I have every reason to believe that the application of this system will spread in the next few years.

While this development has been going on there has also been an effort in many large cancer clinics to use the conventional high voltage x-ray machines, with special speculum attachments, to introduce x-rays directly into the various body cavities. Here again the method is still under development, but the results reported seem very satisfactory. We have the same economy already mentioned, ease of application, no need for anesthesia, and a generally ambulant treatment. Of course the local application of x-rays does not eliminate the need of supplemental use of x-rays in the treatment of the regional lymphatics, as I have already described. It is difficult at this time to attempt to predict what the future will bring out, but my own judgment is that just now, when radium is becoming very much cheaper due to the discovery of rich sources of supply, it seems very probable that before long it will be largely if not entirely supplanted by x-ray methods, which will be much more economical and much simpler.

A few words as to the dangers of over-radiation, and I am through. Very often enthusiasm with regard to the benefits of the newer methods of x-ray and radium treatment has obscured the well-known fact that radiation treatment depends upon the use of essentially dangerous elements. In many instances over-radiation has resulted in catastrophe. No one can seriously believe that the end justifies the means if the treatment leaves the patient with his cancer arrested or even destroyed, but with extensive tissue necrosis and serious secondary infection which produce an end state far worse than the original cancer. Enthusiasm for new methods must be tempered with judgment in this as in all types of treatment. As I see the general trend in the treatment of cancer, it appears to be more and more away from the strictly surgical methods, and more toward either combined or purely radiologic methods of treatment. This will require still more judgment and conservatism in the use of these very potent agencies.

Rhode Island Medical Society

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Rhode Island Medical Library, 106 Francis Street, Providence

Next Annual Meeting, June 7-8, 1939

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ANESTHETIC EXPLOSIONS

When, in 1846, William Morton first gave ether for a dental operation, he poured ether on his handkershief for the patient to inhale, while his assistant held the lamp. Ether is inflammable and the vapor is explosive when mixed with oxygen but luckily no fire nor explosion marred this first demonstration. During the millions of operations in which ether was used following this historic event a few explosions occurred but they were for the most part without serious consequence. In this period, ether was given many thousands of times, by flickering gas lights, in rooms with open grate fires, beside hot kitchen stoves, close to live thermocauteries, with sparking electric motors and all sorts of defective electrical connections. Yet chloroform, which decomposes in the presence of an open flame, gave us more concern. With the advent of ethylene, acetylene and cyclopropane as anesthetics, we not only learned that these gases are highly explosive and likely to lead an unconscious patient to a miserable death but also we are told that ether vapor has an explosive index even higher.

Anesthetic explosions occur rarely, which is fortunate, because they are among the most terrifying of surgical tragedies. The patient enters the hospital for some minor operation or for childbirth; the anesthetic is administered and the operation progresses. Perhaps a cautery is in use or a spark of static electricity ignites the mixture of anesthetic and oxygen. There suddenly is a sharp explosion; the gas apparatus may be wrecked, and often the blast extends to the patient's air passages filled with the explosive mixture. The patient's lungs then are ruptured and he dies a painful and distressing death.

Of the anesthetic agents in use at the present time, chloroform and nitrous oxid are not explosive; ethylene, cyclopropane, acetylene, ether and ethyl chloride form explosive mixtures when combined with oxygen. Acetylene is little used as an anesthetic. Ethyl chloride is more likely to burn than to explode. The possibility of explosion with mixtures containing ethylene, cyclopropane or ether vapor must constantly be kept in mind. The measures commonly taken to avoid these explosions; such as electrical connection of the anesthetic apparatus, the anesthetic and the patient to a metallic grill inlaid in the floor and carefully grounded, keeping a high percentage of humidity in the atmosphere of the operating room, posting signs warning of the explosive nature of the agent in use, care in the use of cautery or electrical appliances, frequent inspection of electrical connections; all have proved unreliable in prevention of these tragic accidents.

Statistical estimation of the frequency of explosion of different anesthetic agents would be an idle exercise; no known law governs their occurrence. Considering the tremendous number of times that ether has been used, the number of ether explosions in comparison with ethylene or cyclopropane is almost negligible. The safety of ether results from the high specific gravity of its vapor. While ethylene and cyclopropane diffuse rapidly in every direction, heavy ether vapor sinks immediately to the floor. It travels down the stairs and its characteristic odor is evident in the hospital grounds. While no precaution is known that will assure us against explosions of ethylene or cyclopropane, ether explosions may readily be guarded against. A mixture of ether vapor with oxygen should not be passed through a metallic or rubber tube. Open flames, cautery irons and sparking electrical apparatus should be kept at a level higher than the supply of ether. Ether vapor should not be confined in a small closed room. The ether explosions which have

occurred have been due to gross disregard of these principles. A charged ether cone was placed on top of the cabinet which housed an electrical suction pump; ether vapor descended to the sparking motor, exploded, and destroyed the cabinet. An anesthetic, in a small closed room, turned the switch of an electrical suction pump which was on the floor; an explosion followed which burned the anesthetist slightly but did not harm the patient. Following an operation, the anesthetist flushed out the gas-oxygen-ether apparatus with pure oxygen; the mixture of gas-oxygen and ether exploded destroying a part of the apparatus. Oxygen tanks and gas-oxygen apparatus are labelled "Use No Oil." A mechanic wiped off the seat of an oxygen cylinder valve with a greasy finger; when the flow of oxygen was started, a serious explosion followed.

Ethylene or cyclopropane may explode today, tomorrow, or next year. Ether explosions are preventable. Before forsaking this well tried agent, to experiment with less certain anesthetics, the voice of the patient should be heard. His are the lungs which may be ruptured.

PROVIDENCE MEDICAL ASSOCIATION

Minutes of the December Meeting

A regular meeting of the Providence Medical Association was called to order by the President, Dr. Alex. M. Burgess, on Monday, December 5, 1938, at 8:45 P. M. The minutes of the last meeting were read and approved. The Secretary reported for the Standing Committee as follows:—

1. That the following nominations have been made for officers of the Association for the year 1939:—

For President, Harry C. Messinger,
For Vice President, John G. Walsh,
For Secretary, Herman A. Lawson,
For Treasurer, William P. Davis.

For members of the Standing Committee for five years, Alex. M. Burgess and Frank B. Cutts,

For Trustee of the Medical Library for two years, John E. Donley,

For Councilor for two years, William S. Streker,

For Reading Room Committee (three men for one year term), Frederic A. Coughlin, Joseph B. Webber and Robert G. Murphy,

For Delegates to the House of Delegates of the Rhode Island Medical Society, A. J. Pedorella, J. M. Beardsley, C. R. Doten, H. J. Gallagher, N. A. Bolotow, Joseph Franklin, Charles Bradley, W. S. Streker, H. A. Lawson, J. P. Eddy, 3rd. D. V. Troppoli, Maurice Adelman, F. Ronchese, A. M. Burgess, G. F. White, M. Saklad, J. A. Hayward, H. C. Messinger, E. W. Bishop, C. L. Southey, H. F. McCusker, W. P. Buffum, James Hamilton, J. G. Walsh, M. M. Potter.

2. That a motion was seconded and passed that the President place before the membership for vote at the next meeting the question of transferring the annual meeting from January 2, 1939, to January 9, 1939, in view of the fact that the New Year Holiday will be celebrated on January 2.

3. The motion was seconded and passed that an annual report of each committee of the Association be mimeographed and distributed to all the members of the Association at the annual meeting.

4. The motion was seconded and passed authorizing the Executive Secretary to take the necessary steps to become a Notary Public in order that he may offer the services of such office to the members of the Association.

The report of the Standing Committee was approved and accepted.

Dr. Messinger read the preliminary report of the Committee for the Study of the Need and Supply of Medical Care. The report was accepted and placed on file.

Dr. Langdon read the report of the Committee on Publication, which included recommendations for enlarging the Rhode Island Medical Journal under the auspices of the Providence Medical Association. The report was accepted.

Dr. Batchelder, Chairman of the Committee for the Study of a Plan for the Early Detection of Tuberculosis, gave a preliminary report of progress in the work of the Committee and placed before the membership through the Chair the following motion:—That the Legislative Committee be instructed to confer with the Committee on Tuberculosis and Silicosis with the view toward drafting an amendment to the State Law regarding the reporting of cases of tuberculosis so that it will be possible for city and town health departments and other interested organizations to obtain information regarding tuberculosis patients. This motion was seconded and passed. The President announced that the Committee would be continued.

The President placed before the membership the recommendation that the annual appropriation of five hundred dollars for the purchase of new medical publications and for the binding of old journals be considered. The recommendation was cast in form of a motion by Dr. Mowry and was seconded and passed.

On the motion of Dr. William S. Streker, the recommendation of the Standing Committee that the date of the annual meeting be transferred in 1939 from January 2 to January 9 was seconded and passed. Prior to the passage of the motion, the President introduced Dr. Edward S. Brackett, President of the Rhode Island Medical Society who spoke briefly regarding attendance of members at the meeting of the State Society to be held on January 6, 1939.

The President appointed Dr. Ralph L. DiLeone and Dr. Anthony Corvese to serve as the committee to prepare the obituary of Dr. V. L. Raia.

The motion of Dr. Mowry for the re-election to membership of Dr. J. P. Lobo and Dr. Earle Brennan was seconded and approved.

The business of the meeting being concluded, the President introduced Mr. Myron Weiss, Associate Editor in particular charge of news of medicine for *Time*, Weekly Newsmagazine, who read a timely paper on "The Future Pattern of Medicine."

Dr. David R. Lyman, Superintendent of Gaylord Farm Sanatorium in Wallingford, Connecticut, next presented an interesting paper on "The Early Diagnosis of Tuberculosis," discussion of which was opened by his associate, Dr. William H. Morriss. Members present who joined in the subsequent discussion were Dr. John C. Ham, Dr. Daniel V. Troppoli, Dr. Elihu S. Wing, Dr. William S. Streker and Dr. Joseph N. Corsello.

The meeting was adjourned at 11:00 P. M. Attendance was 220. Collation was served.

Respectfully submitted,

HERMAN A. LAWSON, M.D.,
Secretary.

AMERICAN MEDICAL ASSOCIATION SCIENTIFIC EXHIBIT

Application blanks are now available for space in the Scientific Exhibit at the St. Louis Session of the American Medical Association, May 15-19, 1939. Attention is called to the fact that the meeting is a month earlier than usual, and applications close January 5, 1939. Blanks will be sent on request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn St., Chicago, Ill.

RHODE ISLAND HOSPITAL

Second Reunion of Former Interns

CLINICAL PATHOLOGIC CONFERENCE

Friday, September 9, 1938

Case presented by Dr. Cecil Dustin

A. S., 56 year old white, married, male, entered the hospital complaining of sleeplessness, anorexia and dyspnea, swelling of ankles and feet. The dyspnea had been irregularly troublesome for three years, but sleeplessness and swelling of ankles were of three weeks' duration. For three years, he had had dyspnea and "gas pains" with overeating or on exertion; this did not seem to become worse until one year ago. Since then, the dyspnea on exertion had gradually increased in frequency and duration and, for one year, he had had attacks of nocturnal dyspnea, gradually becoming more frequent and severe. For three weeks, he had been unable to sleep because of orthopnea and a feeling of oppression in the epigastrium. He had had some substernal pain, but never severe or radiating. The attacks of dyspnea became almost unbearable and he could not eat and took liquids only in small quantities and irregularly. Passed dark colored urine frequently and in small amounts. For a few days previous to admission, he had swelling of the ankles which was becoming progressively worse. At no time had the pain in the chest been severe enough to make him feel frightened or apprehensive regarding his immediate future.

P. H. Married thirty years. Used tobacco probably more than average, and more than the average amount of alcohol since the age of thirty-five. Dietary habits, not abnormal. Mother died of heart trouble. Until age eighteen, had frequent attacks of tonsillitis, but no rheumatism of any kind. At age twenty-six, had penile sore lasting several weeks. No treatment. At age thirty-one, had sore on lip, treated with ointment. Had blood test two years later at age thirty-three, which was said to be negative. Life insurance examination with blood test in 1918 — results were not reported, but insurance was issued. Never knew of any positive blood test and had no intravenous treatment at any time. He had had numbness and cyanosis of the fourth and fifth fingers on the left hand ever since childhood, cause unknown. He had no other illness that he could remember.

P. E. Temperature—98.4. Pulse—104. Respiration — 36. Blood pressure — 148/60. Extremely

orthopneic, florid male with jaundiced sclerae, obviously very ill. Pupils regular and equal, react to light and accommodation. Eye grounds, normal except for slight venous engorgement. Arteries, not abnormal. Teeth, decayed. Gums, retracted and infected. Trachea in the mid line. A definite trachael tug during respiration; questionable, during expiration. Thorax — increase in anterior posterior diameter, very little respiratory excursion and none on the left side. On the left, it is flat to percussion in the lower two-thirds.

T. F. and B. S., absent in the lower two-thirds of the left chest. Above the flat area, coarse musical rales and some increase in transmission of breath sounds and spoken voice, evidently, free fluid in the left pleural cavity. On the right side, many moist rales over the whole lower two-thirds. Question of a small amount of fluid at the base posteriorly or elevated diaphragm. One hour after admission, blood pressure found to be 102/80. Heart—l.b.d., indistinct because of pleural fluid. Very diffuse impulse. No thrills. Sounds of good musical quality and did not seem abnormal. No murmurs made out. A^2 loud and ringing with musical quality. Three different examiners agreed on the findings in the chest. No pericardial or pleural friction sounds. Abdomen—not markedly distended. Liver edge, two inches below c.m., smooth, slightly tender. Spleen—not felt. Question of a small amount of free fluid in the abdomen. No other abnormalities found. There was definite pitting oedema over the lower lumbar and sacral region, oedema three to four plus. Pitting oedema below the knees, over the shin as well as posteriorly. Slight oedema of the scrotum noted by one examiner and not noted by two other examiners. No clubbing. Slight cyanosis of the extremities. Reflexes—generally hypoactive, but all present. Babinski — negative. No clonus. No asthenia or hyperasthenia. No abnormally enlarged lymph nodes. Skin generally negative except for oedema. One examiner suggested possible hyperthyroidism because of the general appearance and possible exophthalmos, although this is probably a familial characteristic.

Laboratory findings on admission were as follows: Wasserman and Hinton—positive. Urine— + + albumen. Morphological blood—normal except for W.B.C. 12,600, 82% Polys. B.U.N.—29. Creat.—2.4. Glucose—89. Icteric index—17. Stool —weak reaction to occult blood. X-ray of the chest showed evidence of fluid in both pleural cavities, more on the left and moderate enlargement of the heart with chronic passive congestion. Electrocardiogram was within normal limits.

Because of positive serology, the possibility of luetic aortic disease was considered, but there was nothing in the physical findings to substantiate such a diagnosis, the questionable tracheal tug being the only positive finding with no positive evidence of previous or present hypertension. Because of frequent tonsillitis in early years, the diagnosis of rheumatic disease was suggested by someone who examined the patient. Fairly good diuresis was obtained with Salyrgan, about eight pounds of fluid being lost in six days. On the tenth day in the hospital, the left chest was tapped and 1400 c.c of fluid obtained. The fluid showed a moderate number of pus cells. No organism seen in smear. Culture gram positive dipolcocci in chains, bile, soluble. Chest tapped on the seventeenth day and 300 c.c of fluid obtained. Sp.g.—10.10., many red blood cells, pus cells. Culture gram positive diplococci in chains, not bile soluble, identified hemolytic strept.

During this time, there was slight rise in temperature above normal nearly every day, occasionally as high as 101, usually one degree or less. Pulse—average 90 to 100. Respirations—varying from 20 to 40. Oedema persisted. Diuresis used about once a week with fair results. Repeated blood chemical test showed gradual drop in B.U.N. until on the twenty-third day in the hospital, it was 19. Creat. dropped to 2.2. The serum protein on one examination was 3.7 and on another 4.4. On the twelfth day in the hospital, the visiting physician discovered unequal blood pressures 140/60 in the right arm and 90/80 in the left arm. One week later, pressure in the right arm 132/62 and left arm 78/64. Five days later, the right arm 125/80 and left, 75/60. Differences in volume in radial and brachial pulse was noted and second chest plate made on the twenty-fourth day in the hospital showed increased density at the left base extending to the third anterior interspace consistent with fluid and mottled density at the right base due to congestive changes. The right leaf of the diaphragm has a normal contour and is well defined. There is no fluid in the right base. There is enlargement of the heart shadow in the region of the left ventricle. The heart sounds were definitely less forceful in character and the condition gradually became worse. A second electrocardiogram on the twenty-first day in the hospital showed quite definite changes as

compared with the first one. The patient died on the twenty-ninth day in the hospital, the weight having dropped from 188 on admission to 158½ pounds six days before death.

Comment

Dr. Dustin: The diet was gone into. He got quite a variety of foods. It does not seem as if deficiency enters into it. In spite of the history of frequent tonsillitis no tonsilar tissue was visible. He did not admit his tonsils had been removed and I could not find anything in the record that would help us. I don't know of any ordinary type of insurance that requires a Wassermann: it may have been a sugar rather than a Wassermann. His insurance was issued so apparently there was nothing positive, Wassermann or sugar. The story of numbness and cyanosis of the fingers is interesting. He called it a bluish and purple color of two of his fingers on either hand. This was not noticed while he was in the hospital. He never had blanching of the fingers, at least no record had been made of it in the history.

P. E.: On inspiration a very definite tracheal tug was noted by one examiner but not by any other. We have two or three interns on each service and they usually record the findings and are willing to sign them, which is a good point. After you sum up the various opinions you are apt to get the right examinations. I found three recorded blood pressures—the highest 160 and the lowest around 120. There is no history of any previous hypertension and we have no symptoms that would indicate it. There was a good deal of disagreement concerning the chest findings. There was no clubbing of the fingers. The signs are consistent with fluid. Left border of the heart was obscured because of fluid. Basal metabolism rate was determined during a fever and probably of no value. Except for the positive serology the laboratory findings are remarkably negative. Sometimes it is not easy to identify some chest cultures: this organism was first reported as being bile soluble but later was thought to be a hemolytic streptococcus.

In spite of treatment the edema persisted, yet we were getting good response from salyrgan. Respirations 20 to 40. With the patient in bed this is abnormal. It seems to me that we see very few of them that have 20. I think it is pretty important. The blood pressure findings are very interesting. Every time the blood pressure on the left is markedly below that on the right. It is a very definite difference.

During the last few days in the hospital he raised a definite sputum. There was very definite evidence of at least two pulmonary infarcts. Sudden attacks of breathlessness — not mentioned in any of the follow-up noted but the nurses recorded those instances. I am quite sure of pulmonary infarcts. The liver was below the costal margin by two examiners. There was some disagreement in the matter of fluid in the abdomen on admission.

Those are the high spots and that is all the information available.

Demonstration of X-ray Films

Dr. Batchelder: These first two films were taken on admission: they show essentially the same things; evidence of fluid at both bases, about equal on the two sides, possibly a bit more on the left than the right. The borders of the heart are obscured so that the exact size of the heart cannot be determined from these films. Two weeks later he had two more films and at this time the right side had practically cleared up. There still remains a little increased density at the left base but the diaphragm is apparently showing through quite well. Now we can get a better view of the heart: it does seem moderately enlarged in the transverse diameter. The supracardiac density is not greatly widened so this is the picture of a decompensated man on admission who has mostly recovered in three weeks time. The left ventricle is not well outlined so we cannot be sure as to whether there was an aortic insufficiency but from the history there was no aortic murmur so it is doubtful if he did have much aortic failure. The shape of the heart is more that of diffuse enlargement. The lung fields are relatively clear except for some involvement at the left base. In the first two films this has the appearance of fluid and what may be in the lung underneath is pretty hard to say. There still remains a little thickening at the right base but it is quite small. I would think it would be part of a chronic passive congestion picture.

Dr. Dustin: Some of the clinicians disagreed quite a bit as to what this shadow might be (pointing to film).

Dr. Batchelder: My impression would be that it is due to an engorged vein.

Dr. Dustin: At the time this man died things were just as I indicated. No definite diagnosis.

Dr. Weyler: Dr. Dustin asked me to discuss the difference of blood pressure findings. The brachial vessels on either side may be of different calibre. The brachial vessel on one side might be

compressed by the shoulder blade. Other causes of differences would be aneurysm, dissecting aneurysm, new growths, atheroma of subclavian, embolism, thrombus in the clavicular region. It is interesting to note that normally the individual in the prone position shows no difference in blood pressure between the arms and legs while on standing it is increased in the legs over that of the arms. This difference is equal to the height of the column of blood. Lower blood pressure in the leg compared with higher in the arm is more usual and we usually think of coarctation of the aorta which is a very rare condition. It is more definitely found however in obstruction of the common iliac and femoral vessels.

Dr. Dustin: The differential diagnosis considered in this case seemed to favor aortic aneurysm as best accounting for the symptoms. 2nd: Aneurysm and coronary occlusion.

Demonstration of Postmortem Material

Dr. Clarke: The postmortem examination was limited to the chest. Here is the heart and aorta. It shows a very definite syphilitic aortitis and there is marked narrowing of both coronary orifices. The aortic valve appears very little involved. It measures only 7 cm. in circumference. There is no reason to think it was not competent. To dispose of the difference of blood pressure in the arms there was marked narrowing of the subclavian orifice on the left.

In addition to the narrowing of the coronary orifices the left coronary artery, down a cm. or 2, is quite markedly narrowed, reducing the lumen to a mere slit. It is mostly intimal thickening histologically. They tell us that syphilis does not involve the coronaries below their orifices. I suspect that this is not due to syphilis but I don't know how to prove it is not.

There are grayish streaks running through the left ventricle, both laterally and posteriorly. The wall is of normal thickness and the left ventricle is not dilated. There is some myocardial damage but no evidence of any left sided heart failure. The right auricle and ventricle are dilated. There is thrombus in the auricle. The right heart is hypertrophied and thickened. The scarring which we saw on the left is not visible on the right. We have a heart which has a syphilitic aortitis but we find definite evidence of right sided failure. We find nothing in the heart to explain it except that the orifice of the right coronary is narrowed. We have the lungs here and in the pulmonary vessels are thrombi, large ones, old, attached and organized and microscopically all through the lungs in the small arteries are organized thrombi that must have been present there for months, at least. In addition, there is much scarring or fibrosis of the lung tissue and infiltrations of lymphocytes and plasma cells.

We have many sections of this heart. The aorta shows typical syphilis. In the heart we can see a great many of the things that Dr. Paulin showed you yesterday as characteristic of syphilitic myocarditis. I do not know how to be certain about that. I think there is a good possibility of syphilitic myocarditis. While this may have weakened the heart somewhat it is not the cause of his right sided cardiac failure. I believe the pulmonary lesion is responsible for the cardiac failure and death. There is even more skepticism concerning syphilitic pneumonitis than there is concerning syphilitic myocarditis. Those who believe in it describe lesions much like those in this case.

Clinical Diagnosis:

Aortic aneurysm (syphilitic).

Coronary occlusion.

Pathological Diagnosis:

Syphilitic aortitis (with narrowing of orifices of the right and left coronary and left subclavian arteries).

Chronic pneumonitis and thrombosis of pulmonary arteries.

Evidence of right sided cardiac failure.

OBITUARY

D. FRANK GRAY, M.D.

Dr. D. Frank Gray was born in Brooklyn, New York, on September 18, 1863. After a common school education and an interval at work he spent a year at Dartmouth Medical College and was graduated from Bellevue Hospital Medical College in 1892. He served an internship at Blackwells Island and at Christ Hospital, Jersey City. For many years he was on the active staff of St. Joseph's Hospital of Providence. He was a member of the American Medical Association, the Rhode Island Medical Society, and the Providence Medical Association, and of Tyler Council, Knights of Columbus.

His early years were devoted to general practise, but in later years as an internist his chief interest

was in gastro-enterology. He was persistently enthusiastic in his efforts to keep abreast of the times, as is evidenced by regular attendance at medical meetings and the various clinics and his active participation in them and by his post-graduate work in Boston and elsewhere, continuously kept up weekly for the past thirty years. He was painstaking in his work, genial and kindly in his relations with his confreres and was dearly loved because of his quiet personality, his sympathetic understanding attitude toward his patients and his highly intelligent and faithful service to them. He may well be classed as one of Lord Chesterfield's "Nature's Gentlemen."

He is survived by his widow, Anne (Devereaux) Gray, by a daughter, Helen, wife of Professor Joseph Jackson of Yale, and by two grandchildren.

George S. Mathews, M.D.
William S. Streker, M.D.

WILLIAM H. HIGGINS, M.D.

Dr. William H. Higgins died suddenly in Providence, May 23, 1938. He was born in Marion, North Carolina, December 14, 1873. He attended the elementary schools there, leaving to go to Livingston College at Salisbury, North Carolina, from which he was graduated and later became a Trustee. He graduated from Leonard Medical College at Raleigh, North Carolina, in 1902, took a post-graduate course at Long Island College of Medicine and came to Providence, registering June 1, 1903.

He enjoyed an extensive general practice, maintaining an office at 144 Dexter Street, then 312 Cranston Street, and lately at 212 Union Street.

He was a member and Chairman of the Board of Trustees of Winter Street A.M.E. Zion Church, a member of many fraternal organizations, a member of the Providence Medical Association, the Rhode Island Medical Society, the What Cheer Medical Society, and Past President of the National Medical Association. He was interested in various civic movements and was appointed a member and became chairman of the Rhode Island State Board of Podiatry in 1936.

He is survived by his wife, Bertha G. Higgins; a daughter, Prudence C. A. Higgins, a social worker in the Rhode Island Public Welfare Department, and a host of friends by whom he will be mourned.

James A. Gilbert, M.D.
Carl R. Gross, M.D.

CREIGHTON WALTER SKELTON, M.D.

Dr. Creighton Walter Skelton, a prominent general practitioner in Providence for the past thirty-eight years, died at his home, 145 Narragansett Boulevard, on June 26, 1938.

He was born in Kingston, New York, on September 5, 1873. In that city he received his preliminary education, graduating from Kingston Academy. He obtained his professional education at Albany Medical School, Union College and received the degree of Doctor of Medicine in 1898. He served his internship in the Albany Hospital.

Doctor Skelton located in Providence in 1900 and continuously practiced here. In 1913 he was married to Irene Beaman. In 1926 he was appointed business manager of the Rhode Island Medical Journal which position he held until his death and, by his untiring efforts and successful management, he helped to raise the Journal to an outstanding position among medical publications. He was associate editor of Albany Medical Annals, alumni journal of his Alma Mater.

Dr. Skelton was a member of the American Medical Association, the Rhode Island Medical Society, the Providence Medical Association, a past president of the Medico-Legal Society of Rhode Island and in 1929 served as coroner for the city of Cranston. He was also a member of Wadsworth Lodge, No. 4, of the Freemasons of Albany, New York, and a past patron of the Eastern Star. Dr. Skelton is survived by his wife and his daughter, Mrs. Elizabeth Lind.

During the course of his long practice he gained the esteem of many patients and friends by whom he will be greatly missed.

A. R. V. Fenwick, M.D.
G. E. Teehan, M.D.

LOCAL EVENTS

December 3. Dr. F. Ronchese attended the annual Atlantic Dermatological Conference at the Johns Hopkins Hospital, Baltimore.

December 7. Dr. Bertram H. Buxton, President of the New England Obstetrical and Gynecological Society, presided at the annual meeting held at the University Club in Boston. Twenty Rhode Island members attended. Clinics were held by the Lahey

Clinic and at the Free Hospital for Women, the Massachusetts General and Carney Hospitals. Dr. John G. Walsh was elected Vice President of the society.

December 9. Dr. Halsey DeWolf entertained the Friday Night Medical Club. His subject was "The Thoracic Clinic of the Rhode Island Hospital." Dr. Philip Batchelder demonstrated X-ray films. The subject was discussed by Drs. Bird, Dustin, Peters, Gormly and Clarke and by the members of the club.

December 12. The Providence Medical History Club met with Dr. Wilfred Pickles. He read a paper on "Antonio Scarpa" and demonstrated a fine copy of the Tabulae neurologicae anatomicae.

December 13. The regular meeting of the General Staff of the Homeopathic Hospital of Rhode Island was held at noon. Dr. John Williams spoke on "Gynecological Problems in General Practice." Luncheon was served at the close of the meeting.

December 13. Dr. Herbert G. Partridge entertained the Amos Throop Medical Club. His subject was "Maternal Mortality." It was discussed by Drs. Brackett and Jordan and by members of the club.

December 15. The subject for the meeting of the Staff Association of St. Joseph's Hospital, held at noon, was "Moving Pictures Showing the Use of Salyrgan as a Diuretic"—followed by the "Presentation and Discussion of a Maternity Case with a Nephrotic Syndrome." The speakers were Drs. J. A. Gormly, J. T. Ward and G. E. Teehan.

Dr. Philip Batchelder has moved his office to 129 Waterman Street.

Dr. Clarence E. Bird has opened an office for the Practice of Surgery at 116 Waterman Street.

UPHOLD HONOR OF PROFESSION

The obligation assumed on entering the profession requires the physician to comport himself as a gentleman and demands that he use every honorable means to uphold the dignity and honor of his vocation, to exalt its standards and to extend its sphere of usefulness. A physician should not base his practice on an exclusive dogma or sectarian system, for "sects are implacable despots; to accept their thraldom is to take away all liberty from one's action and thought." (Nicon, father of Galen.)

From the Code of Ethics of the A. M. A.

PROVIDENCE HEALTH DEPARTMENT NOVEMBER, 1938

During the month of November more than seventy cases of mumps have been reported to this department. We are evidently experiencing an epidemic of this disease. At present the greatest portion of cases is on the Smith Hill and Mt. Pleasant section, although no part of the city is free. This is a reportable disease and physicians should report all cases of mumps to this department. All children who have contracted mumps are excluded from school as long as there is tenderness and swelling. The city is comparatively free of other cases of communicable disease.

**Vital Statistics*

	1938 Nov.	*1937 Nov.*
Deaths all	274	271
Deaths under 1	23	18
Deaths over 70	107	77
Births	432	430
Marriages	207	283
Infant Mortality	53.4	43.
Death Rate	13.68	13.52
Birth Rate	21.47	21.49

Principal Causes

1. Heart Diseases	83	68
2. Cancer	41	47
3. Pneumonia	15	10
4. Nephritis	18	26
5. Cerebral Hemorrhage	10	28
6. Auto Accidents	1	8

Communicable Diseases

	Cases	**Deaths*
Diphtheria	0	0
Scarlet Fever	12	0
Measles	0	0
Whooping Cough	84	1
Pulmonary Tuberculosis	0	8
Septic Sore Throat	8	0
Typhoid Fever	3	0
Poliomyelitis	0	0
Gastro Enteritis and Bac. Dys.	2	2
Epid. Encephalitis	0	0
Epid. C-S Meningitis	0	0

*Includes non-residents.

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AMERICAN BOARD OF OPHTHALMOLOGY

The American Board of Ophthalmology announces an important change in its method of examination of candidates for the Board's certificate. Examinations will be divided into two parts. Candidates whose applications are accepted will be required to pass a WRITTEN examination which will be held simultaneously in various cities throughout the country approximately 60 days prior to the date of the oral examination.

The WRITTEN examination will include all of the subjects previously covered by the practical and oral examinations. ORAL examinations will be held at the time and place of the meeting of the American Medical Association and of the American Academy of Ophthalmology and Oto-Laryngology, and occasionally in connection with other important medical meetings. The ORAL examination will be on the following subjects: External Diseases, Ophthalmoscopy, Pathology, Refraction, Ocular Motility, Practical Surgery.

Only those candidates who pass the written examination and who have presented satisfactory case reports will be permitted to appear for the oral examination. Examinations scheduled for 1939: WRITTEN: March 15th and August 5th. ORAL: St. Louis, May 15th; Chicago, October 6th. Applications for permission to take the written examination March 15th must be filed with the Secretary not later than February 15th. Application forms and detailed information should be secured at once from Dr. John Green, Secretary, 6830 Waterman Ave., St. Louis, Mo.

HOW TO RECOGNIZE CANCER OF THE BREAST WHEN IT CAN BE CURED

Any lump on the breast should be viewed with suspicion, especially if it is not painful, J. Stewart Rodman, M.D., Philadelphia, says in his article, "Cancer of the Breast," in the January issue of *Hygeia, The Health Magazine.*

In pointing out symptoms by which cancer of the breast may be detected in its early stages, when 75 per cent of such cases can be cured, Dr. Rodman says there are two kinds of lumps that may be found on the breast, the "good" or non-malignant kind, which is painful, and the dangerous kind which is not painful.

When it is realized that about 12,000 deaths occur annually from cancer of the breast, the life-saving possibilities of early recognition and treatment become apparent. A discussion of this ailment for all practical purposes may be limited to this condition as it occurs in the female, although in a small number of cases, not over 1 per cent, it is seen in the male.

When bathing or dressing, a woman may find a little irregularity in the breast that has not been there before. If this has been associated with pain, if it has come on just before the menstrual period, the chances are that it is simply the result of irritation of the tissue and may not be so serious.

If, however, it occurs after the age of 45, when the greatest number of cases of cancer of the breast are observed, is not associated with any pain and is not tender when it is pressed, it should be seen at once by a physician who is trained in the diagnosis of this condition.

The lump of cancer is hard and as a rule is attached to the skin. When it grows, if it is centrally located back of the nipple, it will cause retraction of this part of the breast; but the patient must not wait for that to happen, because this means it has been there too long.

Lumps that are non-malignant are apt to occur in both breasts, certainly in from 20 to 25 per cent of the cases, while cancer is almost always limited to one breast.

INFANT MORTALITY IN GERMANY

In Germany, which has had sickness insurance longer than any other nation in the world, the infant mortality rate is higher than in any state in the United States that is in any way comparable with Germany as to climate and racial uniformity, *The Journal of the American Medical Association* for Dec. 17 reports.

In the *Deutsches Aerzteblatt,* of Oct. 1, 1938, Hans Klepp reports on "The Struggle Against Infant Mortality," and gives a table showing the course of infant mortality during the present century. Although showing a fairly consistent decrease in the death rate per thousand live births, the 1935 rate in Germany was 69. In eleven northern states that have been in the registration area since 1920, the range of the infant death rate per thousand in 1935 was between 41.2 for Oregon and 53.9 for New Hampshire, according to a summary issued by the Bureau of the Census of the United States Department of Commerce.

Babies have many ills, and they have no other way to tell you about them than by crying.—*Hygeia.*

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THE RHODE ISLAND MEDICAL JOURNAL

Volume XXII FEBRUARY, 1939 Number 2

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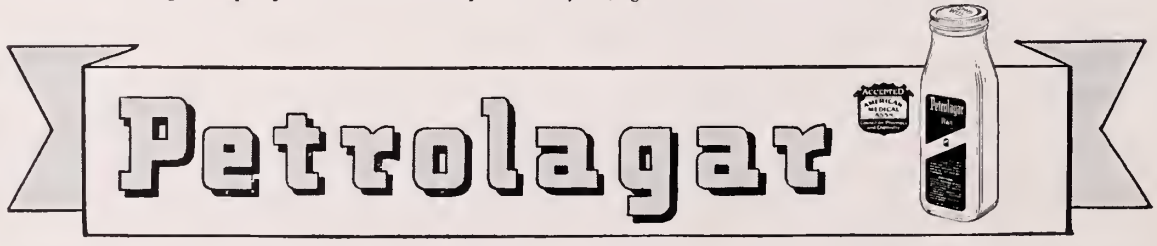
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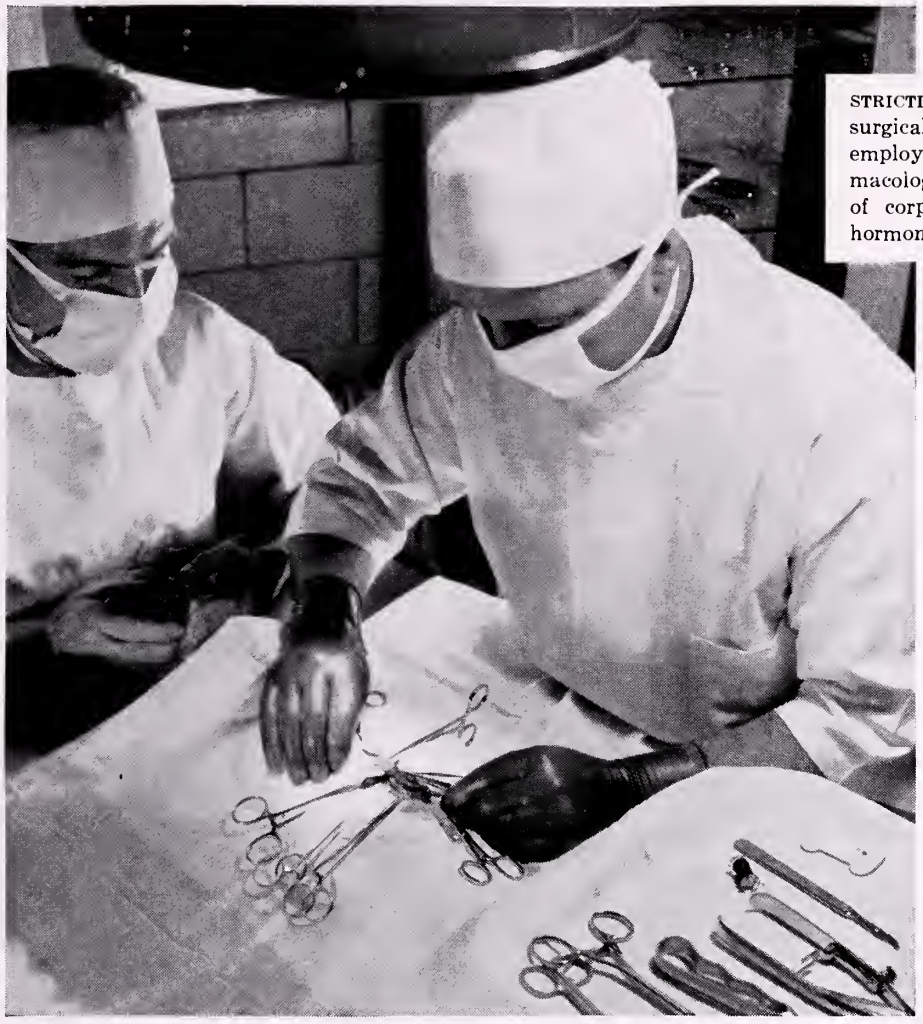
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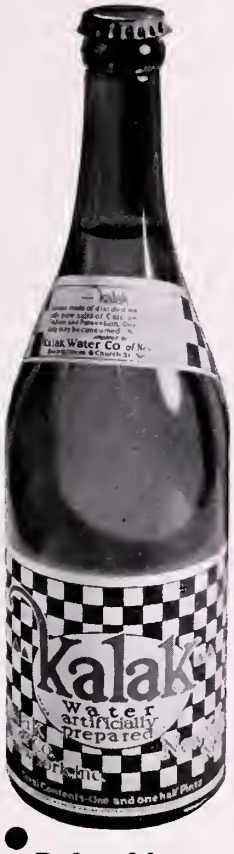
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At present, quantitative determination of vitamin B_1 necessarily requires the use of one of the several bioassay methods available for that purpose. None of these is entirely satisfactory (1, 2). Perfection of a chemical method for quantitative measurement of thiamin in foods would add greatly to our knowledge of its occurrence in nature, as well as permit more comprehensive studies of factors which might influence the stability of vitamin B_1 in foods. We have a relative paucity of such data relating to vitamin B_1 when the available information on vitamin C is considered.

It should also be stated that the synthesis of thiamin—which is now produced on a commercial basis—has already provided the clinician with a most useful diagnostic tool. Administration of the pure vitamin in cases of suspected thiamin deficiency, with notation of the therapeutic response, constitutes the most trustworthy means of detecting avitaminosis B_1. After the diagnosis has been confirmed and the immediate deficiency corrected by administration of thiamin, it is desirable that future adequate supply of vitamin B_1 be obtained through dietary readjustments (1).

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(1) 1938. J. Amer. Med. Assn. 110, 727.
(2) 1938. Ibid. 111, 927.
(3)a. 1936. J. Nutrition 11, 383.
b. 1936. J. Amer. Diet. Assn. 12, 231.
(4)a. 1932. J. Nutrition 5, 307.
b. 1932. Ind. Eng. Chem. 24, 457.

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THE RHODE ISLAND MEDICAL JOURNAL

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HEPATO-BILIARY SYNDROMES

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187 WATERMAN ST., PROVIDENCE, R. I.

For several years we have been interested in the diseases of the liver and bile passages. While these studies have been in progress, much work on this important region of the body has appeared in the literature. In this article we shall review briefly some new concepts of considerable clinical import and present in a general way our own observations, attempting to indicate, on the basis of recent work, the clinical applications that can logically be made.

In spite of much research, and even more speculation, the pathogenesis of hepato-biliary disease has remained ill defined. A great deal of the work, though useful to physiology, has been of little value to the clinician. Studies of the hepato-biliary system in animals cannot be applied to man in any but the most superficial manner. It is in the hospital clinics, wards, operating theatres and laboratories that the battle of disease has to be fought; for the most part, by the common field forces—the clinicians.

The trend of modern medicine has also led to an increased interest in functional disturbances which may precede or even cause organic changes in structure. The production of symptoms by an altered physiology, and not due solely to structural aberration, has been too long neglected under the influence of the German school of pathologic anatomy. Modern, practical clinical methods of exploration have enabled us to study this altered human physiology quite adequately. Regarding the intestinal and biliary tracts, we have gained extremely useful information by studying under clinically controlled conditions gastric, duodenal, biliary and pancreatic secretions. Direct visualization of the stomach by means of the gastroscope, small bowel intubation studies, indirect visualization of the gall bladder and of the whole extra-hepatic biliary tree, have resulted in data whose significance has not yet been fully realized. In the light of this new knowledge we present some clinical syndromes that have thus become recognized.

From the Department of Gastro-Enterology, The Johns Hopkins Hospital, Thomas R. Brown, Chief. Read before the Pawtucket Medical Association, on June 16, 1938.

Biliary Dyskinesia

We shall not concern ourselves with the well established clinical entity of cholecystitis and cholelithiasis. Here, the pathology, symptomatology, diagnosis and treatment has been extensively described. Only a word must be said in passing. Given a patient with a history of colic, indigestion, jaundice, and whose cholecystograms show definite evidence of pathology, the only and finite therapy is surgical intervention. This seems to need reemphasis because we have lately seen ruptured gall bladders, gangrene, abscesses and fistulas,[1] resulting from attempts at cure by medical management. As Dr. Lahey has so frequently stressed, the general practitioner to whom the vast majority of these people come for diagnosis, treatment and disposition, must realize that these cases cannot be carried through repeated attacks; they should be submitted to operation while the disease is still in great measure confined to the gall bladder. Common duct obstruction is the result of long standing cholelithiasis and the liver and pancreas are almost always involved. "Only timely surgery will give lower mortality and better end results."[2]

However, there is a group of cases with definite and variously severe symptoms referable to the biliary system and showing no demonstrable or consistent deviations from the normal as measured by modern methods of investigations, whom surgery gives little if any relief. These cases (about *50%* of all those with biliary complaints!)[3] have been a source of trouble and dissatisfaction to their physicians. In order to discuss these cases adequately it is necessary to consider briefly the newer physiology of the biliary system.

During twenty-four hours the liver normally secretes from 500-1300 c.c. of a thin watery bile continuously at a pressure of 300-360 mm. of water. When this pressure is exceeded, liver secretion ceases. The reaction of hepatic bile is alkaline, the pH ranging from 7-8.5.[4] Its most important constituents are bilirubin, bile salts, cholesterol, fats, base, chlorides, bicarbonates, at times bacteria, immunologic constituents, and so on.

During infectious febrile diseases, such as pneumonia, bile output is decreased. This is also probably true with chronic passive congestion of the liver and with portal hypertension from whatever cause. As we shall show subsequently, increased resistance at the duodeno-choledochal junction can diminish or entirely suppress liver secretion of bile. About the only substance that is definitely known to have a choleretic effect is bile salt, and this only increases the fluid volume of the bile, the total output of bilirubin and other biliary constituents (notably dyes) remain unaltered or even slightly diminished.[5] With the sphincters of Oddi contracted, the bile ducts fill and the hepatic bile flows into the gall bladder. During fasting it is here concentrated about ten times. The mucous membranes of the fundus and body of the gall bladder affect this by the absorption of water, chloride and bicarbonate, so that these substances are markedly decreased in both absolute amount and in concentration.

The concentration of cholesterol and bilirubin is increased, none being normally either secreted or absorbed. Calcium and the bile salts are concentrated, only small amounts being absorbed normally. The mucous membranes of the gall bladder and bile ducts add nothing but mucous to the bile. During this process of absorption and concentration the pH of the bile is lowered, and at this acid reaction the bile acids render the cholesterol and fats soluble.

When the hepatic secretory pressure of 300 mm. of water is exceeded, as can so easily happen, the liver parenchyma no longer functions normally and the hepatic bile becomes altered in composition. As a result, and also because of a concomitant increased activity of the mucosal cells lining the ductal system, "green system" bile, lightly pigmented, or so-called "white bile" will be found in the biliary passages, depending on the severity and/or duration of the increased intra-ductal pressure. This may occur with the following:[6]

(1) Toxic Hepatitis (chloroform, arsenic, etc.) No bile formation due to obvious liver cell destruction.

(2) Common duct obstruction with a functionless gall bladder. Cholecystitis, cholelithiasis, cholangeitis, etc.

(3) A liver secreting against increased pressure in the absence of total obstruction. "Physiologic block."

The last leads us directly to a consideration of the other important function of the biliary tree: motility. Since the hepatic, lower cystic, and the greater portion of the common duct are passive fibro-elastic tubes, this refers to the gall bladder and its intimate relative — the choledocho-duodenal junction. The common bile duct and the hepatic duct enter the second portion of the duodenum obliquely and usually through a common orifice, the papilla of Vater. Where the common duct joins the duodenal wall smooth muscle appears (see figure 1) and is thicker than anywhere else in the extra-hepatic biliary system. The muscular end of the common duct here consists of two structures:[4]

(1) The long, oblique-fibred ampulla into which empties the pancreatic duct.

(2) The small terminal ring of muscle embracing the tip of the papilla of Vater which strictly is the Sphincter of Oddi.

The wall of the ampulla is very much like the ejaculatory muscle around the urethra.[7]

The gall bladder and these choledochal muscles are reciprocally innervated and form a functional unit. The latter very competently prevent the regurgitation of duodenal contents as well as air into the common duct. They also regulate the intraductal pressure and the egress of bile and pancreatic juices into the duodenum. The tone of this efficient sphincteric mechanism is maintained by the left vagus and modified by the splanchnic sympathetics. The nervous mechanism is supplemented by a humoral one—by cholecystokinin, a hormone said by Ivy to be produced in the duodenum and upper intestine. The sphincters are influenced by local duodenal reaction to foods, to various drugs, or infection, and to reflex stimuli coming from other portions of the G. I. tract. A mechanism that is air-tight and yet so responsive can become functionally deranged very easily and long before gross anatomical changes take place. In fact, that is now considered the logical sequence. Considerable emphasis has been given the obvious organic obstructions of the common duct, such as stone, neoplasm, stricture; but little attention has been paid to physiologic dysfunction of the choledochal muscles which may obstruct the outflow of biliary and pancreatic secretions. Since the extra-hepatic biliary tract, like the G. U. tract, is really a conduit system, interference with free drainage can give rise to enormous dilatation of the entire biliary tract.[8] This functional block may also be the instrumental factor in the genesis of stones, infection, etc. Spasm of the sphincters of Oddi, just like spasm of the cardiac end of the oesophagus, like spasm of the pylorus, or of the anal sphincters, is a

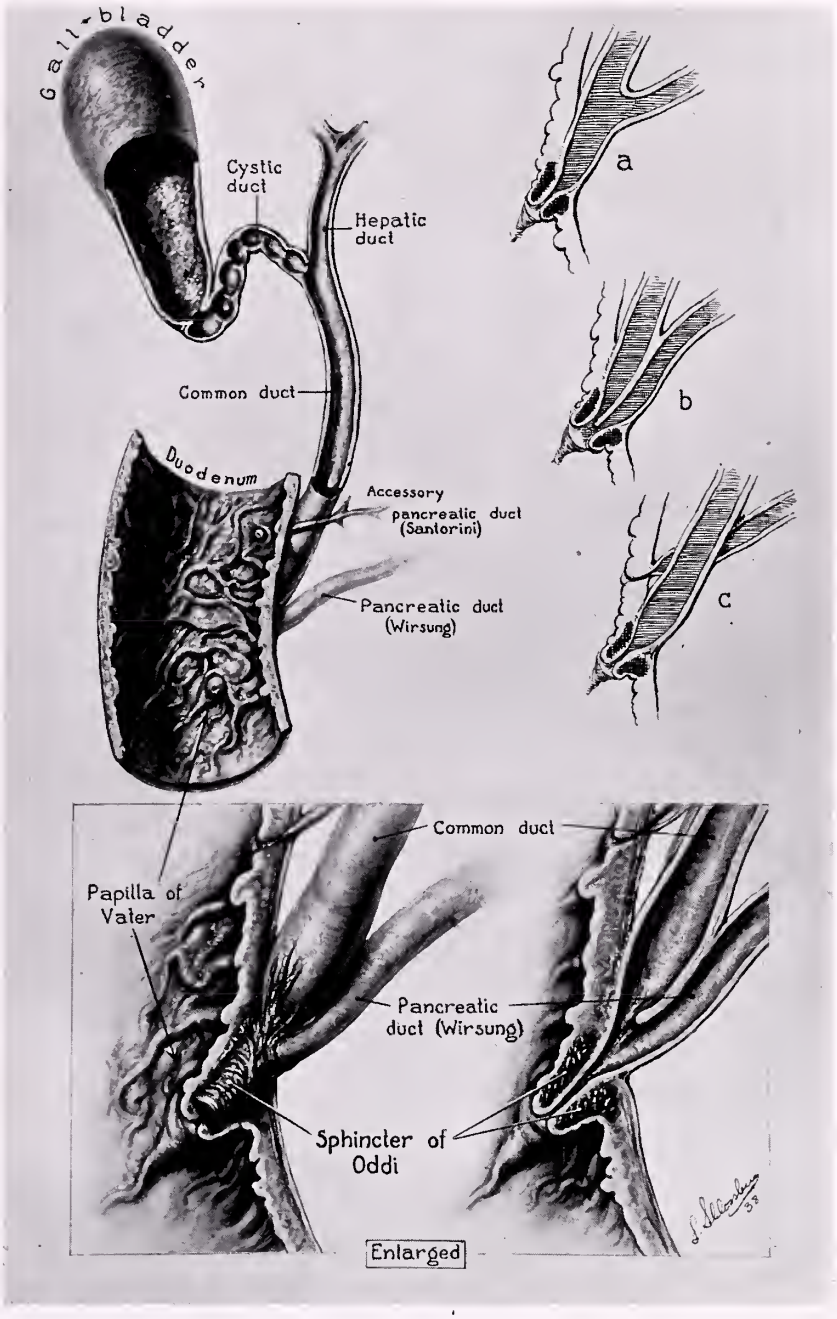


FIGURE 1. *Note the long, oblique-fibred ampulla into which empty the pancreatic and common ducts. The illustrations at the upper right show common variants found at operation or autopsy.*

definite demonstrable condition in whose wake follow stasis, dilatation, hyperperistalsis, and muscular hypertrophy. Such a concept is compatible with the fact that all sphincters in man may deviate from the normal by showing hypertonicity. In the G. I. tract they usually all do. The gall bladder in trying to evacuate against this physiologic block produced by sphincter spasm which can withstand over twice the pressure which the gall bladder can muster, will give rise to true biliary colic, nausea, bloating and the whole train of familiar complaints.[9] Clinicians have for some time suspected the possibility of such a purely functional derangement with only secondary anatomic changes as responsible for liver and gall bladder pain. Many surgeons have encountered hepatic congestion, bile stasis, and dilatation of the biliary ductal system without demonstrable organic anatomic cause for the obstruction. The first clinical report of gall bladder colic without stone or infection was made by Krukenberg in 1903. His report gave no explanation and attracted no attention. Based on the anatomic work of Oddi and supplemented by physiologic experiment, Meltzer[10] in 1917 and Lyon[11] in 1919 suggested that hypertonicity of the sphincters of Oddi might act as a mechanical block in producing biliary colic and even jaundice. This too, drew little notice or clinical application. John Berg, a Swedish surgeon, finding undoubted absence of structural change in cases of undoubted biliary dysfunction, considered a physiological disorder of the choledochal sphincters as the logical explanation. He showed a case with hypertrophy of these muscles. This has been corroborated since by Giordano and Mann,[12] Nuboer,[7] and Newman, and others. The whole subject was finally put on a new basis in 1931 by the work of Westphal and his collaborators[13] who called this condition "hypertonic dyskinesia." Since then this syndrone has enoyed such names as "spastic distention"[4] "Cholepathia spastica"[14] "biliary dyskinesia"[15] "spastic dysfunction"[16] and "biliary dyssynergia."[8] Most of this work has unfortunately gone unheeded because "adhesions" and "inspissated bile" provided a facile explanation which suppressed thought for many years. Radiographic visualization of the extra-hepatic bile ducts has helped to establish this syndrome as an entity.

Robins and Hermanson[17] of Boston and Best and Hicken[18] of Nebraska have developed and described the technique of X-ray visualization of the bile ducts at operation. Hundreds of such immediate cholangiograms have enabled Dr. Robins to diagnose elusive common and hepatic duct stones, to determine with certainty the patency of the cystic duct when a short-circuiting procedure was contemplated, and to aid in the diagnosis of pancreatitis or tumor of the head of the pancreas. The wider acceptance of this precise, practical surgical aid will obviate the unfortunate sequelae of inadequate exploration and prevent unnecessary opening of the common duct.

Of equal value has been delayed cholangiography. In cases presenting post-operative biliary catheters or fistulas, injection of hippuran makes visible for study the status of the bile radicles and the ampulla. Hippuran is a 48% aequous solution of organic iodine and best serves the purpose. It mixes readily with bile and flows easily through the bile passages. The other common opaque media are too viscous or too dense and will obscure small stones. Some very important details in the technique of injection we hope to include in a subsequent paper. Cholangiography has made possible the study of the biliary tree of humans under experimentally varied conditions and its response to proper physiologic and pharmacologic stimuli. Should symptoms recur and bile disappear from the stools, cholangiography will indicate with certainty whether re-operation is necessary. At such times it may be a life saving procedure.

As has been extensively recorded in the literature,[19, 20, 21, 22] the following facts have been culled:

1. The retrograde injection and visualization of the biliary tree can take place only if there is a block at the duodeno-choledochal junction. The ducts resist in a marked manner such retrograde injection and the opaque medium runs into the duodenum before the film can be exposed. This was shown by Ginsburg and Benjamin[23] in the case of post-operative duodenal fistulas.

2. The sphincters usually become incompetent after cholecystectomy, bile dribbling into the duodenum as in animals without a gall bladder. Later, as competency is regained, the ducts dilate as the intrabiliary pressure rises. In spastic states the sphincters do not become incompetent.

3. The tone of the choledocho-sphincteric mechanism is not produced by the tone of the duodenal wall,[24] but is, nevertheless, influenced by it and by other portions of the G. I. tract. It increases for example, with fasting, with sudden distension of the stomach and duodenum, and with the acidity

of the gastro-duodenal contents. So-called gall bladder symptoms are really duodeno-gastric reactions. We believe the textbook's descriptive differentiation of one from the other a myth.

4. The normal intra-ductal pressure as measured post-operatively in man equals from 0-30 mm. of water. The perfusion pressure—the height of fluid in a manometer necessary to overcome sphincteric resistance and cause fluid to flow into the duodenum—ranges around 150 mm. of water. The gall bladder and liver can muster a pressure of 300-350 mm. of water.

5. Drugs profoundly effect the sphincteric mechanism by way of the autonomic nervous system, or by their action on smooth muscle directly.

Contraction-muscarine, pilocarpine, physostigmine, nicotine, and acetylcholine stimulate the tonus of the sphincters. Acid locally also produces contraction. The most important drug to be considered is morphine, which has long been known to cause smooth muscle spasm.[25] It causes a rise of perfusion pressure from the normal 150 mm. of water to about 400-700 mm. of water within two minutes of injection. And this extreme pressure is maintained for about four hours. Its alkaloidal relatives, pantopon, dilaudid, and codeine act in like manner. It can be shown that morphine can bring on severe gall bladder colic. Many patients will experience their first attack of gall bladder pain upon the chance administration of morphine after a tooth extraction, pre-operatively in extra-hepatic surgery. The use of morphine or its derivatives to control the pain of colic is like clubbing the patient, it merely interrupts the function of the sensorium.

Relaxation-atropine subcutaneously or in the form of the ordinary tincture of belladonna, causes relaxation by para-sympathetic paralysis. Its prolonged action makes it clinically valuable. Scopolamine also causes relaxation, especially in combination with atropine. We have no good sympathetico-mimetic drugs. Dr. Robins and I could not satisfy ourselves that benzedrine, even in heroic doses, had any constantly definite effect. The same holds true for adrenalin and papaverine which otherwise act directly as smooth muscle relaxants. The most efficient drugs in this regard are: warm magnesium sulphate locally, glyceryl trinitrate (nitroglycerin) 1/100 grain under the tongue, and amyl nitrate by inhalation. The latter gives a transient but very marked effect. The former (glyceryl trinitrate) has a more prolonged action. Both act by their direct effect on smooth muscle.

Ivy[6] and Cole[26] maintain that pituitrin relaxes the sphincters of Oddi and causes the gall bladder to evacuate ¼ to ½ of its contents. This is important, in view of the fact that this drug has been much used of late for clearer X-ray visualization of the gall bladder. We know of no good series of controlled studies that have settled this important point.

Based on this data we can predicate a rational therapeutic and prophylactic routine for post-cholecystectomy cases.

Included in the usual post-operative care should be:

1. Atropine grs. 1/100 to 1/75 subcutaneously, or tincture of belladonna, drops 15-20, three times daily.
2. Glyceryl trinitrate grs. 1/100 under the tongue one-half hour before each meal, three times a day, during the hospital stay. The hypodermic tablets dissolve readily.
   No untoward effects have been noticed even after prolonged use.
   A new smooth muscle relaxant—an extract of pancreatic tissue—has just been described. We know nothing about it.
3. A thick cream egg-nog, or olive oil for those who can take it, may be given nightly. The undesirable purgative effect of mag. sulphate post-operatively offsets its beneficial effect on the duodenum and sphincters.
4. Patients with a T-tube, catheter, or fistula should have their common duct irrigated with sterile warm saline or olive oil about every other day.
5. In cases of biliary fistulas or where one is feared, and in cases with low liver reserve, for that matter after any biliary surgery, morphine and its derivatives should not be used. For the control of pain there are other analgesics. For the control of colic, amyl nitrate is most efficient.

Such a regimen will maintain free biliary drainage; it will serve to flush out organized debris, mucus plugs, and small stones.[27] It will help early restitution of good liver function and, in many cases prevent re-operation.

Case 1. This patient, a 48 year old housewife, presented a history of gas, sour eructations, nausea, etc., coming on after pregnancy fourteen years previously. During the year before admission there had been several attacks of gall bladder colic and transient jaundice. Operation revealed a distended, thickened gall sac and several small pigment stones. Immediate cholangiography revealed a markedly dilated common duct but no stones. About twelve

days after operation, the patient began to have severe right upper quadrant pain and her stools became acholic. Films taken after the injection of hippuran through a T-tube showed a long narrow spastic ampulla. No dye could be seen in the duodenum. The patient experienced typical colic during injection. After the inhalation of an amyl nitrite perle, an ampulla of normal length and width was seen. The spastic sphincters—cause of the ampullary narrowing and of the choledochal dilatation—were relaxed and dye could be seen in the duodenum. The patient made the uneventful recovery of which the surgeons speak.

The question comes up, does the motor dysfunction of the choledochal sphincters precede the presence of stones or infection, or do the muscles become hypersensitive in the presence of a foreign body or inflammation? Post-operative cholangiograms clearly demonstrate that it is possible for the common duct sphincters to function normally in the presence of stones, strictures, and generalized biliary tract infection. However, it seems not illogical to assume that a primary "sphincterismus" in giving rise to bile stagnation, favors the formation of infection and stones. This might have been so in the above case. This concept has been accepted by such an authority as Ivy, and only on this basis can we explain stoneless gall stone colic, post-cholecystectomy return of symptoms, cholangeitis without stone or stricture, and the reformation of common duct stones.

What gives rise to this motor dysfunction of sphincter spasm which causes intermittent liver function failure? We do not know. Because of the frequent associated disorders of the heart (slow pulse, extra-systoles), the stomach (hyper-peristalsis, pylorospasm) and the colon, "spastic" constipation) the neurological concept of vagus sensitivity has been invoked. Lichtwitz,[28] in a devastating paper on the subject, criticizes out of existence corsets, sedentary life, diminished abdominal movements, (as in pregnancy) constipation, ptosis and so on.

Case 2. J. N., a man about 68 years of age, was operated on for what was thought to be an upper abdominal catastrophe. At operation it was found that the gall bladder was filled to capacity with stones. There were stones also blocking the cystic duct and the lower common duct. One stone was found impacted at the mouth of a distended left hepatic duct. Because of the patient's condition a rapid cholecystectomy was performed, probing and irrigation of the ducts being curtailed, and a T-tube was placed in the common duct. As was expected, pain, profuse bile leakage, and acholic stools supervened soon after. A cholangiogram at this time showed one stone at the lower end of the common duct and another blocking its duodenal exit. With constant gentle pressure by way of the T-tube and with the simultaneous administration of two ampules of amyl nitrite to extreme flushing, resistance suddenly gave way. A subsequent film showed the opaque medium in the duodenum and jejunum and an absence of filling defects. The patient was treated as just outlined and, we are happy to state, went on to an eventful recovery.

The lines of therapy above described for post-cholecystectomy cases can be carried over successfully to the management of those patients whom the surgeons, from past experience, are loathe to subject to surgery. We have termed these cases "functional" and we conceive them as being different only in degree; they have not yet spilled over into the pathologic. The therapy also serves, therefore, as a prophylactic measure, How can these cases be recognized?

After a complete survey of the patient (with especial reference to the right ureter and kidney) we find that cholecystography is a real stumbling block. The report may be "faint shadow," or there may be "normal concentration of dye but poor emptying." The gall bladder may entirely fail to visualize, yet present normal findings at a subsequent examination. This, we believe, may be the answer and may serve to help to clarify the situation:

It must not be forgotten that the liver is an important physiologic link in the Graham-Cole test. With increased resistance at the choledocho-duodenal junction, as by spasm, the secretory function of the liver is deranged. This can be surmised with a proper performance and evaluation of the Brom-sulphalein test. The fault can lie in back of the gall-bladder, so to speak. Lahey and Jordan[29] in 1931 reported that of a series of 65 intravenous gall bladder examinations which showed no filling, 44% showed good filling after 5-10 days' therapy of the colon. This, we assume, means most likely smooth diet, anti-spasmodics, sedatives, etc. Which is a good way of promoting relaxation of spasm of the choledochal muscles, releasing the increased intraductal pressure, and restoring normal liver function. Lahey and Jordan offer no explanation, but our concept is susceptible of clinico-experimental proof, as we hope to show in a subsequent paper.

X-ray examination of the gall bladder is immeasurably aided by biliary drainage and the two methods jointly achieve a high degree of diagnostic accuracy. Negative or equivocal X-ray findings and negative biliary drainage findings, in the face of hepato-biliary symptoms, bespeak the syndrome "biliary dyskinesia."

The following lines of therapy will prove successful.

1. Diet.
   As Newman says, there should be restraint in the use of coarse irritating foods and "over-interesting cookery." No other dietary restrictions. Fat intake regulated according to the patient's needs. Fruit juices not interdicted.
2. Medication.
   Antispasmodics and sedatives.
   A favorite prescription with us is:
   Tr. Belladonna 20.0
   Tr. Hyosc. 15.0
   Elix. Phenobarb. ad. 90.0
   Sig. one teaspoon ½ hour ac. t.i.d.
   Kantor[30] has shown that these cases show a "dissociated acidity" (low-normal free acid, high total acidity). On this basis, and because it controls many of the other gastric symptoms, we prescribe Amphojel or Creamalin in milk between meals.
3. Duodenal Drainage.
   This serves to relax the sphincters and decompress the biliary system. By some it has been abused to the point of quackery. The procedure is lengthy, arduous, and not without unpleasantness to the patient. The effect is not prolonged. We have shown that more adequate and prolonged biliary drainage can be obtained with decholin and trinitroglycerine. Decholin markedly increases the secretory pressure of the liver. With the patient lying down we inject 10 cc. 20% solution intravenously and administer 2 1/100 grain tablets of trinitroglycerine under the tongue 10 minutes apart. This is done three times during the first week, followed by a maintenance dose of 2 Decholin tablets t.i.d. after meals. Incidentally, this will take care of the constipation which is an inevitable complaint. The nitroglycerine should be taken lying down t.i.d. every other day. The latter and the decholin can be tapered off with symptomatic improvement. For extreme pain, amyl nitrite affords relief.

The following case report is illustrative.

Case 3. L. M., a 21 year old intelligent colored housewife, first sought relief from persistent vomiting and severe abdominal pain in the night-emergency clinic of the Johns Hopkins Hospital. Except for marked tenderness in the right upper quadrant, the general physical examination was negative. We saw the patient in the clinic the following morning. The hypo. of 64 mg. Codeine and 96 mg. of Luminal had made her no better and she retched all night. History revealed that following delivery of her second child six months previously she began to experience upper abdominal pain, nausea, and vomiting, recurring every three weeks with increasing severity and lasting for longer periods of time. The rest of the history was irrelevant.

The physical examination showed a well developed and well nourished young colored woman with the typical haunted look of one on the continual verge of vomiting. There was definite tenderness and spasm of the right rectus and on pushing the liver from behind, one had a feeling that the gall bladder could be delineated. Noticeable was scleral and sublingual jaundice.

The blood studies revealed an icteric index of 14% and a positive direct Vanden Bergh. The Wasserman reaction was negative. There was no leucocytosis or anemia. The urine was bile and urobilin positive. X-rays of the chest and abdomen were negative. Report of a Graham-Cole test read: "Gall bladder concentrates dye in a subnormal manner. No definite evidence of stones." A duodenal drainage was performed with considerable difficulty, but normal A, B, and C, bile was obtained. No pathologic crystals.

After a regime of a smooth diet, tr. of belladonna to tolerance, and mineral oil, the patient returned in two weeks with a report that she had had six attacks of abdominal pain, nausea, and vomiting lasting 2 to 4 hours. We now gave the patient decholin intravenously and by mouth, and nitroglycerine. The relief from symptoms was dramatic and progressive. The jaundice disappeared. The gall bladder was re-X-rayed several months apart. The reports read: "Gall bladder functions normally. No stones are demonstrated."

The patient became pregnant again but remained symptom-free, the only medication being tr. of belladonna and nitroglycerine for occasional pain.

Other studies on this patient of the relation of the hepato-biliary system to pregnancy cannot be gone into here.

Surgery and Liver Involvement

It is not within the scope of this paper to discuss the complicated topic of jaundice. We do want to mention briefly some important new work which especially concerns the surgeon.

One of the most important post-operative complications occurring in jaundiced patients is bleeding. It is well known that the jaundiced patient will

usually show no tendency to hemorrhage either clinically or by laboratory test, yet he may have serious bleeding soon after operation. Calcium and fibrinogen have been repeatedly investigated in jaundice and found to be of no etiologic significance.[31] [32] Quick[33] has offered evidence showing the important relationship of the prothrombin factor in the mechanism of blood coagulation and the bleeding tendency in jaundice. By a careful quantitative method he has found that a wide margin of safety normally exists, so that the usual methods of coagulation time determinations may remain normal until more than 80% of the prothrombin is lost. A decreased prothrombin may therefore exist which is not sufficient to exhaust the margin of safety, but which will bring the patient into the hemorrhagic zone when the trauma of operation and anesthesia (further injury to the liver)[34] are added.

It has been found that the prothrombin factor is reduced not only by liver damage but also by an avitaminosis.[35] It seems that a fat soluble vitamin (vitamin K) is required for normal blood coagulation. Quick[36] and others have very rationally suggested that the bleeding in patients with a biliary fistula or with common duct obstruction, is due to the absence of bile acids in the intestinal tract. This causes a faulty absorption of vitamin K, the bile being a carrying agent for the vitamin across the intestinal mucosa. Snell[37] has recently reported that vitamin K is an extremely important factor in the bleeding of jaundice and should receive prime consideration in handling post-operative hemorrhage.

The following management of the jaundiced patient, or of any patient undergoing biliary tract surgery, is based on sound scientific ground.

Pre-operative.

1. Dextrose generously by any or all routes is now a sine qua non.
2. Gelatin, because of its content of aminoacetic acid, has been advocated by Quick and has a rational basis.
3. The vitamins (viosterol, etc.) and calcium intravenously are included on empiric ground.
4. The Boyce (quoted) Serum Volume Test for the hemorrhagic diathesis in jaundice is a handy guide in the estimation of the bleeding tendency.
5. Avertin and amylene hydrate should be avoided as anesthetics. Local anesthesia plus nitrous oxide and oxygen are best.

Post-operative.

1. All the measures outlined previously.
2. Decholin by mouth and a dietary to include a liberal supply of fat will assist in the absorption not only of vitamin K, but of vitamins A and D as well.
3. Dextrose and gelatin as before.

For bleeding, or when the Serum Volume Test (Boyce) shows a bleeding tendency:

1. Repeated small transfusions. (Prothrombin concentration rises quickly but only temporarily.)
2. Vitamin K in the form of powdered alfalfa leaf or the prepared extract.

The dramatic effect of the latter is illustrated by the following case which we present through the courtesy of Dr. Walter D. Wise of Mercy Hospital of Baltimore.

Case 4. C. H., a 56 year old white man, was first seen by Dr. Wise on April 8, 1938, with a history of progressive, painless jaundice. There had been loss of 25 pounds during the past month. No nausea, belching, hematemesis, or history of gall bladder symptoms. The stools were acholic, the icteric index extremely high, and the Vanden Bergh biphasic. The serum bilirubin ranged around 12 mg. per cent. The other laboratory studies were negative. After extensive and appropriate pre-operative preparation, the patient was operated on and was found to have, surprisingly, stones in the gall bladder and cystic duct. These, as well as the common duct, contained "white bile." A T-tube was left in place.

The patient did fairly well, draining good yellow bile soon after the operation. Later, however, the stools became acholic. The prothrombin clotting time was 70 seconds (definitely abnormal) and the patient showed persistent bleeding in spite of all measures. He was now given vitamin K which was received from Dr. Snell of the Mayo Clinic. (Two capsules four times daily and bile salts.) The following day the prothrombin clotting time dropped to the normal figure of 30 seconds and the patient now stopped bleeding. He has shown no bleeding during the past two weeks even though his stools are still bile-free. A regime to attempt to correct the latter has now been instituted.

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THE ART OF GENERAL ANESTHESIA

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Perfection in the art of general anesthesia concerns the safety and comfort of the patient during operative procedures and making conditions more favorable for surgery. As there is a wide variety of anesthetic agents and methods, one must remember the following factors in choosing an anesthetic: 1. The age, habits, physical build, and physical findings of the patient; 2. The type of operation; 3. The surgeon; 4. The ability of the anesthetist.

The choice of premedication also should take into consideration the above factors. It should keep the patient from the scare of the operating room, reduce his psychic shock, and help to give better induction to the anesthetic.

The premedication may start the night before operation when a sedative is given the patient to aid his sleeping during the night. This premedication, consisting of nembutal, or pentabarbital sodium, gr. Iss to III, may be given also to the patient two hours before the operation if he is excitable. In addition, morphine sulphate is usually given hypodermically in doses of gr. 1/6 to 1/4. As morphine gives excitement for one-half hour and then depression for one-half hour, the best time for its administration is a half-hour before the anesthesia. Certain patients may not require morphine if sufficient sedation has been produced by the barbiturates. Atropine sulphate, gr. 1/150, for general anesthesia, or scopolamine hydrobromide, gr. 1/150, for spinal anesthesia, is best given at the same time as morphine.

The patient's blood pressure should be taken, his chest examined, and a routine urinalysis done within twenty-four hours before operation.

In the operating room the anesthetist prepares the patient by taking his blood pressure, pulse, and respiration, and records them on the anesthetic chart. The chest is checked by stethescope. The history, physical and laboratory findings are checked, and any contraindications to the anesthetic selected are reported to the surgeon. The patient is sized up and is reassured by a few kind words and the gentle manner of the anesthetist. The patient's mouth is examined for artificial teeth or gum. The anesthetic

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record is kept throughout the operation, and the blood pressure, pulse, and respiration are taken and recorded every ten minutes or more frequently as indicated. Untoward manifestations and drugs used as to time and amount are noted on the chart. The anesthetist will attend to the anesthesia of the patient for which he is responsible and he will not leave the patient's head nor lose track of the respiration for one minute until he is definitely relieved of the responsibility.

Chloroform should be given as an anesthetic only by open drop as the more oxygen inhaled with it the less are the postoperative complications. Its advantages are: 1. Pleasant to patient; 2. Low cost; 3. Easy administration; 4. Excellent relaxation; 5. Prompt recovery. Its disadvantages are that it is the most toxic anesthetic used on the heart during operation and postoperatively on the liver; it may cause cardiac death during operation and liver abscess after operation.

Ethyl chloride is best used either for rapid short anesthesia or only for analgesia. Surgery is started when the patient stops talking or his hand falls and allows one to two minutes of surgery. Its advantages are: 1. Pleasant to take; 2. Low cost; 3. Easy induction; 4. Rapid reduction. Its disadvantages are that it is a cumulative drug which piles up in the body and that respiratory death may occur.

Ethyl ether is the safest anesthetic and is the universal agent of choice. It is usually best given in a semi-closed method with a towel wrapped around the mask. Children, the feeble, the old, and very anemic patients require less inhalation anesthesia and more air and oxygen than normal adults, so for them the towel is rarely used. The anesthetist should apply an eye-pad and grease with vaseline the cheeks and lips of every patient to prevent ether burn. The anesthetic may be started by holding the mask four fingers above the patient's face and dropping ether very slowly until the patient is accustomed to ether vapor. After several breaths, the ether is spread all over the mask at an even rate of sixty drops per minute without changing the position of the mask. After six to eight breaths the mask is lowered very slowly one finger at a time until it rests on the face. Gradually the air is shut off by placing a towel about the mask, first across the chin, then when the patient is used to this, folding it over the sides one at a time. During this time the ether dropping has been kept continuous and constant. Now the rate is increased until the patient is in surgical anesthesia. The entire period of induction from the beginning with ether to the operative incision should not exceed fifteen minutes. If the patient chokes or coughs, the mask is removed until the patient takes one or two breaths of air, as this condition is due to too concentrated ether vapor and lack of oxygen. If the patient retches or swallows, the amount of ether is increased to deepen the anesthesia. If the patient vomits, his head is turned to one side so that there is free exit for vomitus and the ether dropping rate is increased. If there is shallow breathing or respiratory embarrassment, an airway is gently inserted. Ether convulsions during anesthesia may be due to excess carbon dioxide, ether impurities, cerebral anemia, improper anesthesia or trauma. Its pathology is edema of the brain which causes the characteristic symptoms of clonic convulsions. In treatment, carbon dioxide is not given but barbiturates intravenously or avertin rectally are given, also the head is raised and cold applied to it and the anesthetic is discontinued. During the operation the rate of ether dropping and depth of anesthesia are maintained according to the need of the patient and the stage of the operation. If shock is anticipated because the blood pressure drops 15% or more and the pulse rises, an intravenous solution of 5% glucose in normal saline is started, ¾ gr. Ephedrine is given, and ether is stopped until the patient has recovered. A constant check is kept of the respiration during anesthesia and the pulse is kept track of by finger on the temporal or maxillary artery. During surgical anesthesia, the respirations are regular and machine-like, the pupils are contracted or slightly dilated, the eyeballs fixed, the color normal, and the muscles relaxed. In the early surgical stage, inspiration is long and expiration is short; in mid-surgical they are about equal, and in deep anesthesia inspiration is short and expiration is long with sometimes a respiratory grunt. Usually ether can be stopped when the peritoneum has been sutured. 10% carbon dioxide is started about ten minutes before the close of the operation to aerate the lungs and have the patient nearly awake on leaving surgery. The advantages of ether anesthesia are: 1. Inexpensive; 2. Easy administration; 3. Good relaxation; 4. Most fool-proof administration. Its disadvantages are: 1. Unpleasant to patient; 2. Slow in action; 3. Irritant to respiratory tract, kidneys, liver, and brain; 4. Slow, disagreeable recovery with nausea and vomiting. Ether is contraindicated in: 1. Patients

with or recently recovered from acute upper respiratory infections; 2. Patients with severe cardiac embarrassment; 3. Patients with pulmonary pathology seriously interfering with lung ventilation; 4. Cautery operations about the head, neck, and chest; 5. Old and debilitated individuals.

Nitrous oxide is the most dangerous anesthetic in inexperienced hands, as the margin between anesthesia and asphyxia is quite narrow. It is taken up in the lungs by the red blood cells and plasma, carried to the nervous centers, and then released in the lungs again, so rebreathing technique by this gas is possible. Nitrous oxide does not give surgical relaxation. Ordinarily one uses 80-95% nitrous oxide. If the oxygen could be kept at 20% there would be no bad effects, but to get some relaxation it is necessary to decrease the oxygen from 20% and increase the nitrous oxide which results in anoxemia which may cause collapsed lung or toxic effects. Good premedication or the addition of ether helps toward better relaxation but also increases the possibility of anoxemia. The advantages of nitrous oxide are: 1. It is non-toxic and non-inflammable; 2. It produces a loose connection with blood and nerve centers causing a pleasant anesthesia and quick, pleasant recovery. Its disadvantages are: 1. It is costly, about $1.00 an hour, and requires special apparatus and a trained anesthetist; 2. As pink is the optimum color with use of this anesthetic, it is difficult to see this or cyanosis in a colored or anemic person; 3. Anoxemia of nitrous oxide raises the blood pressure so it may prove disastrous in a patient with arteriosclerosis or hypertension; 4. Complete relaxation is not safely obtained. Nitrous oxide is contraindicated in: 1. Myocarditis; 2. Severe hypertension; 3. Shock; 4. Alcoholics and drug addicts; 5. Very young children and babies.

Ethylene is similar to nitrous oxide but is more powerful and gives better relaxation. However, 5-10% of ethylene in air is explosive as well as 25% in oxygen, and higher percentages are inflammable; therefore, the entire anesthetic unit should be grounded to help eliminate static electricity. Ordinarily, ethylene is started with 80% ethylene and 20% oxygen and as anesthesia is deepened it is shifted to 90% ethylene and 10% oxygen. The advantages of ethylene are: 1. It can be used well in existing pulmonary, cardiac, vascular, and renal pathology with functional impairment, and in diabetic surgery; 2. Age is no barrier to its use; 3. Ease of induction and rapidity of recovery; 4. Relaxation without cyanosis; 5. Absence of sweating or respiratory irritation. Its disadvantages are: 1. Oozing at time of operation is more marked than with other anesthetics; 2. Inflammability and explosibility of gas.

Cyclopropane is a powerful gas, effective with a large amount of oxygen, and it is superior to either ethylene or nitrous oxide; however, if its concentration exceeds a volume of 3% in air or reaches 50% by volume in oxygen, the mixture is explosive. It must be used with caution as it is effective in 15-20% concentration with 80-85% oxygen. The patient stops breathing if the oxygen falls below 80%. The patient's pulse and respiration should be carefully watched especially during induction, and any sudden irregularity in character should be a warning to change from cyclopropane to some other anesthetic agent. If necessary the addition of ether helps toward better relaxation. Cyclopropane is particularly valuable in chest surgery as it assures adequate oxygenation. In obstetric operative procedures, it gives adequate oxygenation for both mother and baby. Its advantages are: 1. Wide margin of anesthesia without anoxemia; 2. Excellent relaxation; 3. Low toxicity with little or no action on kidneys, liver, or acid balance; 4. Very low incidence of pulmonary complications; 5. Pleasant to patient, quick induction, and quick recovery; 6. Valuable for patients suffering recent upper respiratory tract infections or for patients suffering severe cardiac debility. Its disadvantages are: 1. Costly, so that the carbon-dioxide absorption method of anesthesia is most practical for its use; 2. Inflammable and moderately explosive; 3. Depressive vascular action and toxic action on heart muscle in some cases; 4. Slight respiratory depressant.

Divinyl ether or "Vinethene," in a concentration of 25% vinyl ether with 75% ethyl ether, administered by the open method, makes for a safe, rapid, analgesia-anesthesia. Vinyl ether may also be used alone with oxygen by the closed method, but it is apparently no more advantageous and has more waste from rapid volatilization than when used with ethyl ether. Its advantages are: 1. Very slight toxicity; 2. Smooth muscles as of uterus and intestines are not depressed; 3. Easy administration and maintenance of narcosis degree; 4. Induction and recovery time cut down 30-50% over straight ether anesthesia; 5. Wide anesthetic-lethal margin; 6. No effect on coagulation time of blood;

7. Good abdominal relaxation. Its disadvantages are: 1. It is inflammable and forms, as does ethyl ether, highly explosive mixtures with certain proportions of air, nitrous oxide, or oxygen; 2. Occasional liver damage and respiratory embarrassment.

Avertin (tri-brom-ethyl-alcohol) is a one-dose anesthetic and is uncontrollable as it is injected in the rectum. It is recommended solely as a basal anesthetic. It is used in the dosage of 80-100 mg. per kilo, but usually as 80 mg. per kilo. In deciding the dosage, one considers these factors: 1. Body weight; 2. Body — muscular, bony person takes higher dosage than fat, small-boned person of same weight; 3. Age—the younger the person the higher the dose, except in babies because they do not cooperate; 4. Bone cases need higher anesthesia than abdominal cases; 5. Pathology—tumor cases need higher dosage. In the administration of avertin, the patient should be accurately weighed and the bowel cleaned out by enemata the night before operation. The dosage is determined and the mixture is made up fresh at the time of using. The mixture may be taken from the dosage tables or determined in the following manner: body weight divided by 2.2 x 4 equals amount of distilled water which is added to the avertin-amylene hydrate, and this solution is heated to 40 degrees C. in a closed receptacle. It is tested for chemical changes with Congo red. If the solution is satisfactory, it is introduced slowly over a period of five minutes through a firm rectal tube with the patient lying on his left side. Then the tube is clamped off and left in the rectum and the patient is turned on his back. If the patient becomes too depressed at any time, the tube can be used for withdrawing the mixture. One waits twenty minutes before giving supplementary anesthesia. If the patient becomes too depressed, the colon should be washed out and one pint of black coffee injected. Coramine (1-2-3 capsules) is a sure antidote for avertin in shock cases. The advantages of avertin are: 1. Non-irritating; 2. Valuable for neurotic patient; 3. Best amnesia of any reagent; 4. Useful in all branches of surgery. Its disadvantages are: 1. It is contraindicated in liver damage, acute renal disease, severe cardiac involvement, intestinal lesions, marked hypothyroidism, severe pulmonary tuberculosis, empyema, shock, acidosis, sepsis, toxemia, and cachexia; 2. Caution is necessary with elderly, dehydrated, obese or debilitated patients, and these should not receive over 70 mg. avertin per kilo; 3. It is a respiratory depressant.

Ether-oil, barbiturates as evipal soluble, and paraldehyde are also given rectally and are somewhat similar in action to avertin, as they are best used for basal anesthesia. Two ounces of ether-oil are absorbed per hour rectally, so six ounces last three hours. With ether-oil, patients pass through the secondary stage the same as by inhalation, so it gives an excitement phase. For preanesthetic rectal administration of evipal soluble, one gives 0.2 cc. of a 10% aqueous solution for every pound of body weight. It is valuable for quick-acting and quick-receding basal anesthesia.

Spinal anesthesia is suitable for a wide variety of operations below the diaphragm. Procaine, metycaine, or pontocaine are the usual agents of choice. Procaine is the safest agent, pontocaine gives possibly the longest duration of anesthesia, and metycaine may be considered as between these two as far as toxicity and duration of anesthesia is concerned. For the anesthetic procedure a sterile spinal tray should be ready. The patient's blood pressure is taken and he is turned on his side, knees drawn up to chest, head touching knees, shoulders and hips vertical. The anesthetist scrubs his hands for five minutes, dips them in alcohol, and dons sterile gloves. He prepares the patient's back with ether, iodine, and alcohol, and then sterile drapes. Ephedrine gr. I is given subcutaneously into the buttocks. A 10 cc. Luer syringe is filled with the proper dose of the agent, the correct lumbar interspace is infiltrated with 1% novocaine solution, and a spinal needle is inserted into the spinal canal. When the clear spinal fluid appears, the 10 cc. syringe is attached and the proper amount of spinal fluid withdrawn slowly. Then, if necessary, the syringe is detached from the spinal needle, the stylet replaced, and the spinal fluid and agent mixed by shaking the syringe. The Luer syringe is connected again to the spinal needle, a small amount of fluid withdrawn to see if the needle is still in place, and the solution is then injected slowly. Then the needle is withdrawn quickly from the back with syringe attached, the puncture sealed with collodion, the patient turned flat on his back, and the head of the table lowered 10°. Fifteen minutes after the completion of the spinal anesthetic is the optimum time for surgery. During the operation, if the patient is nauseated, vomits, has low blood pressure, very slow or very fast pulse, oxygen or carbon dioxide is given. Chips of ice will soothe his dry mouth. Intravenous glucose is given for hemorrhage or

surgical shock. An icecap to the head alleviates headache. For restlessness, a small dose of morphine or gas analgesia is given. When the spinal wears off, ether is given if the abdomen is open, otherwise gas is given. The average dosage for spinal anesthesia is as follows:

PROCAINE: (crystals)

Operation	*Dosage*	*Spinal Fluid*	*Interspace*
Rectum, perineum, legs	100 mg.	1-2 cc.	4th lumbar
Abdomen	150 mg.	3-4 cc.	4th lumbar

(Procedure—as given previously).

METYCAINE:

(2 cc. 10% soln. ampoules, 1 cc. has 100 mg.)

Operation	*Dosage*	*Diluted with Spinal Fluid*	*Interspace*
Perineum	.4-.8 cc.	1.5-3.0 cc.	3rd & 4th lumbar
Lower abdomen	.8-1.4 cc.	4-5 cc.	2nd & 3rd lumbar
Upper abdomen	1.5-2.0 cc.	5 cc.	1st & 2nd lumbar

Never give more than 1 mg. of metycaine per pound of body weight. Immediately after injection, the patient is placed on his back. For abdominal anesthesia, the table is tilted to 10 degrees Trendelenburg, but the patient's head is flexed forward on his chest by a pillow which makes the midthoracic region the lowest part of the spine, and the metycaine gravitates to that part. As soon as the anesthesia reaches the desired height, which takes about three to eight minutes, the table is leveled to check the effect of gravity. After twenty minutes, gravity has no further effect on the drug and the Trendelenburg position may be used if desirable.

PONTOCAINE:

(2 cc. 1% soln. ampoules, 1 cc. has 10 mg.)

One mg. of the hydrochloric for each 10 pounds of body weight plus five mg. is the dosage for the average adult. The 2nd or 3rd lumbar interspace is usually preferred. An equal quantity of spinal fluid is withdrawn, so that the injected solution is of a 0.5% solution. This is injected at the rate of one-half cc. per second. The patient is then placed in the level prone position for five to eight minutes to produce sensory block. Then he is turned over in the dorsal position, and the table is turned to a five degree Trendelenburg.

The advantages of spinal anesthesia are: 1. It is best agent for relaxation; 2. Low cost; 3. Easy use; 4. Pleasant postoperative course for patient; 5. Fewer postoperative complications; 6. Allows simultaneous use of electrical apparatus. Its contraindications are: 1. Patients in shock: 2. Psychic, nervous, or apprehensive patients; 3. Operations of longer than 1½ hours; 4. Children of 12 years or less who are not cooperative; 5. Respiratory or heart cases, as spinal anesthesia is a respiratory and cardiac depressant; 6. Systolic blood pressure 80 mm. or less, pulse pressure of about 20, and debilitated patients; 7. Severe hypertension with systolic blood pressure of 200 mm. or over; 8. Diseases of the central nervous system or spine; 9. Septicemias; 10. Gun shot wounds of the abdomen.

Sodium pentothal, sodium evipal, and other intravenous anesthetics are used chiefly for a short deep anesthesia, but may be used for a prolonged lighter anesthesia. Sodium pentothal is more potent than sodium evipal. Sodium pentothal is used as a 5% solution by dissolving one gram of the crystals in 20 cc. of distilled water. Sodium evipal is used in a 10% solution. While the patient counts aloud, thirty seconds are allowed for intravenously injecting 2-4 cc. which usually induces unconsciousness. Then 1-2 cc. more are injected to produce the required degree of anesthesia and relaxation. The duration of anesthesia should last 15-20 minutes. If necessary, or for longer anesthesia, a supplemental dose of the respective solution may be given slowly and intermittently, with the needle continually in the vein, but the total dose given should not exceed 10 cc. for adults. During the injection the position of the jaw should be kept forward, an airway inserted, and a wisp of cotton placed over the nostrils or mouth which by its motion will denote inspiration and expiration. For respiratory depression, coramine, oxygen, or carbogen are given. The advantages of intravenous anesthesia as sodium pentothal are: 1. Ease of giving. Its disadvantages are: 1. Uncontrollable; 2. Vigorous cardiac and respiratory depressant; 3. Post-operative excitement; 4. Special precautions and reduced dosage in liver diseases, old or debilitated individuals, and septic, toxic patients; 5. It may cause spasm of larynx requiring tracheotomy.

Intratracheal anesthesia provides a free unobstructed airway with resulting quiet, effortless breathing. The Magill method is the best procedure. This consists of pushing a sterile, greased, soft rubber, intratrachael tube into one nostril, through the larynx and down into the trachea, after anesthesia has been well induced. Then the anesthetic agent may be given to the patient as desired, oxygen when needed can be given to reach the alveoli immediately and resuscitation can be performed when necessary. It is a valuable method for head and neck operations because the anesthetist is out of the way

of the surgeon and a clear airway is assured. It is invaluable for chest operations because by it pulmonary pressures can be controlled. In abdominal operations, the quiet respirations and lack of laryngeal spasm make this method of utmost value.

Pharyngeal anesthesia through the nose or mouth is useful in operations about the head or neck where a mask cannot be used on the face, where the mouth must be open, or where the anesthetist must be out of the field of operation. It may be given by insufflation with ether, or by to and fro respiration with one of the gases or with ether.

The carbon-dioxide absorption method provides for a tremendous saving in the amount of anesthetic used. With this method a soda lime container is used which removes the carbon dioxide so that the same gases can be used over and over again without disturbing the character of anesthesia provided a constant flow of oxygen sufficient to support metabolism is maintained. The character of the patient's breathing may be controlled by altering the amount of carbon dioxide which he receives and this results in quiet breathing. The gases soon reach body temperature and become moisture laden so that the patient's body heat is preserved and the danger of explosion from static electricity is minimized. This method is especially valuable in neck, chest, and abdominal operations. It has allowed the use of gas anesthesia for many patients who formerly could not economically afford it.

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THE NATIONAL HEALTH PROGRAM

Last July the so-called National Health Program was presented to the National Health Conference and the public. This program was contained in the report of the Technical Committee to the Interdepartmental Committee. The Technical Committee consisted of Dr. Martha Elliot of the Children's Bureau, Dr. Falk of the Social Security Board and Drs. Mountin, Perrott and Waller of the United States Public Health Service.

This report makes the following recommendations: A gradually increasing maternal and child health service is advised. This includes medical and nursing care for mothers throughout maternity, including delivery, with facilities for consultations and expert diagnosis; this work to be carried on by local physicians. Health supervision and medical care for children would be provided, this care also to be given by local physicians with consultations and hospitalization when necessary. This service to families with an income of $1,000.00 or less would ultimately cost $95,000,000 a year, with the Federal Government supplying one-half.

The program for public health services is especially planned to attack tuberculosis, venereal disease, pneumonia, cancer and malaria, and to support work in mental and industrial hygiene. This would eventually cost $200,000,000, of which the Federal Government would contribute one-half.

The program for increase of hospital facilities is based on many statements like the following: General hospital service is not available to a large segment of the population because of the faulty location or inability to purchase care. Construction of hospitals is recommended as follows:

General Hospitals	$630,000,000
Tuberculosis Hospitals	150,000,000
Mental Hospitals	325,000,000
	$1,105,000,000

One-half of this would be provided by the Federal Government.

Appropriations for care of the medically needy are recommended. This would be developed around existing preventive health services. It would provide minimum essential needs, including medical and surgical care, hospitalization and emergency dental care. It would extend to 40,000,000 persons in families of the $800 income group. This would cost $400,000,000, of which the Federal Government would contribute one-half.

A general program of medical care is recommended. The two types of service possible are a system of public, tax supported, medical services, and compulsory health insurance. The choice between these two would be made by each state and the program arranged by the state. The eventual federal support would amount to between one-fifth and one-third of the $2,600,000,000 cost.

Insurance in cash against loss of wages by sickness is advocated. The system of compensation for temporary disability is best patterned after unemployment insurance. For permanent disability the system should be patterned after old age pensions. The first would cost approximately 1 per cent of the wages, the second in twenty years would cost between 1 per cent and 2 per cent of wages.

It is impossible to discuss this program in detail in an editorial. Many of us will feel that it is unadvisable at the present time for the State and Federal Government to make large new appropriations. As medical men, however, it is our obligation to distinguish between proposals which offer definite health advantages to the people and those which do not. The report of the Reference Committee of the House of Delegates of the A. M. A. has set an admirable example in this respect.

This report recognizes that the maternal and child health and the public health services can be enlarged with advantage to the public, although the treatment of disease should be included only when it cannot be successfully given by the private physician.

The construction of new hospitals is approved where such a need exists, although it is believed that the Technical Committee has exaggerated the need. More research facilities for mental disease are obviously needed.

More care of the medically needy is evidently desirable. This should be supplied by the local community. State and federal aid should only be given if the community is unable to furnish this service.

In regard to the general program of medical care, hospital service insurance is obviously valuable. Voluntary cash indemnity insurance plans should be more widely used. The county or district medical society should try to meet the need as it exists in that locality. It seems evident to an overwhelming majority of physicians that any system of public medical care or compulsory health insurance would introduce a bureaucratic organization which would be expensive, inefficient, subject to political control and manipulation, and would surely fail to give the people high grade service.

Insurance against loss of wages during sickness seems in principle to be sound. It is, however, in the interest of good medical care that the attending physician be relieved of the duty of certification of illness.

The report of the Committee of the Rhode Island Medical Society follows the lines of the report of the Reference Committee of the American Medical Association. Several paragraphs in this report are especially interesting.

Under the heading of Expansion of Hospital Facilities, the Rhode Island report says "The hospital situation in Rhode Island would seem to indicate that there is need for providing some arrangement by which the indigent of the smaller towns can use the existing hospitals in the State. If this is done we are of the opinion that existing facilities will be sufficient."

Under the heading of Medical Care for the Medically Needy the Rhode Island report includes the following paragraph. "We believe that in Rhode Island, at any rate, the interests of the public will best be served by a minimum amount of home and office care of the medically indigent, and generous contributions from tax funds for the medical care at the hospitals. We believe that the medically indigent can best be cared for when hospital facilities are available when needed, as the private practitioner cannot be expected to bear the burden of carrying out expensive technical procedures."

The Rhode Island Committee also emphasizes the statements that medical plans should be made and supported as far as possible by the local governmental units and that these should be made with the co-operation and approval of the Rhode Island Medical Society.

This very brief and superficial discussion of the National Health Program indicates some of the questions involved. We shall do well to keep informed on the proposals for new forms of medical care, as we owe it to the public and to our own self respect to be able to talk intelligently about these most important matters.

RHODE ISLAND MEDICAL SOCIETY

January Meeting

At the request of the House of Delegates, a special meeting of the Rhode Island Medical Society was held at the Medical Library on Friday, January 6, 1939. The meeting was called to order by the President, Dr. Edward S. Brackett, at 8:15 P. M.

The President first called upon Dr. Elihu S. Wing, Chairman of the Committee on Hospitalization Insurance, who read the report of that committee. Dr. Hammond moved that the Rhode Island Medical Society approve the report of the committee and use every effort to secure the passage of an enabling act. The motion was seconded by Dr. Dimmitt and unanimously carried. The President next called upon Dr. Roland Hammond, Chairman of the Social Service Committee of the Rhode Island Medical Society, who read the report of his committee. Dr. Gormly moved that this report be approved and that it be printed and a copy sent to each member of the Society. The motion was seconded by Dr. Hunt and was carried.

The President then introduced Dr. Rock Sleyster, President-Elect of the American Medical Association, who was greeted with enthusiastic applause. After extending the greetings of the parent Association to this State Society, Dr. Sleyster gave an address which was listened to with attention and

was applauded during its delivery as well as at the close of the address. Dr. Sleyster outlined the advancement in medical science and the progress of the American Medical Association in raising American medical schools and hospitals to their present high standard, eliminating quackery, fostering public health work and in the war against infectious disease. As a result we have in this country the lowest mortality and morbidity ever chronicled in history.

Dr. Sleyster indicated that every step in medical progress had been taken against opposition. For some years there has been a gradual building-up toward the introduction of foreign systems of medical care. With the depression came the demand for social security. Now, disregarding their unselfish devotion to the public welfare and the millions of dollars worth of charity work which they anually perform, the doctors are made the scapegoats. In the meantime the American Medical Association is not idle. While the delivery of medical service is only a part of the work, more than three hundred plans for medical service for those unable to pay the usual fees or for the indigent are being tested. The American Medical Association is not a building in Chicago; it is an association of the state medical societies, in turn comprising the component district societies. Under this organization the present success in medical work has been achieved. Shall we give up this plan for any European plan?

Following the applause at the close of the address, the President expressed the Society's appreciation of Dr. Sleyster's inspirational talk. The meeting was adjourned at 10:15 P. M. Collation was served. Attendance, 156.

Report of the Committee on Hospitalization Insurance

The following is a report on the activities of the committee appointed by Dr. Brackett representing the Rhode Island Medical Society pertaining to the Hospitalization Insurance Plan in response to a motion made by Dr. Gerber at a previous meeting of the Rhode Island Medical Society.

The *first* meeting of this committee with all nine members present and including Dr. Brackett, President of the Rhode Island Medical Society, was held on November 3 at which time the following resolution was unanimously adopted:

"RESOLVED: 1. That this committee go on record as favoring a Group Hospitalization Plan in principle,

"2. That these principles as pertaining to services given the insured under the Plan should confine themselves with provisions of hospital facilities only and should not include any type of medical care. An exact determination of what constitutes hospital facilities and medical care should be left to consultation between the committee representing the State Medical Society and the Hospitalization Steering Group."

The *second* meeting of this committee was on November 10 and was a joint meeting between the members of this committee and a sub-committee representing the Steering Committee of the hospital group and was presided over by Dr. Brackett. All members of the medical committee were present except one. At this meeting the action of the committee representing the Medical Society taken November 3 was read and it was requested that any use of this resolution should be qualified by the statement that this was purely a decision of the committee and had not been referred to the Society for approval.

Mr. Lindblad then reviewed the work of his committee as outlined in his report.

The discussion which followed this report is outlined by the secretary of the Hospitalization Plan committee as follows:

"It is apparent that, some considerable sentiment exists in the medical profession against approving of any action until all details of the entire Plan had been worked out and incorporated in the enabling act to be presented to the Legislature. This feeling is largely due to apprehension that otherwise, once the enabling act is passed, the Plan adopted might include services of a medical nature and as such be objectionable to the medical profession.

"Since for a variety of reasons it is impracticable to attempt to write all such details into the enabling act, it was suggested that this question could be eliminated for the time being if the hospitals which contemplated entering into the Plan would go on record as agreeing that they would *not* consent that any plan be put in operation which did not have the approval of the Rhode Island Medical Society.

"The whole subject of the nature of the services to be included has been very troublesome elsewhere. There are very good reasons from the point of view of the public for including as much as possible within the service to be rendered under the Plan, to the end that the first cost will also be the last cost;

but rather than have the formulation of the Plan delayed interminably while such controversial issues are debated, your committee feels that the public's interests are better served by putting a plan into operation at this time, eliminating therefrom such items as X-ray and anaesthesia.

"While it has been impossible in the short space of time which has elapsed since the above meeting to communicate with all members of your Committee, it was the sentiment of the undersigned that its report should be amended to include a further recommendation as follows:

> "4. That the hospitals contemplating membership in the Rhode Island Hospital Service Plan go on record as not being willing to consent to *any* plan for non-profit hospital service not approved by the Rhode Island Medical Society in respect to the character of the medical services to be included in the Plan."

This was signed by the seven members of the Hospital Group Committee present.

A report briefly covering the activities of your committee representing the Rhode Island Medical Society on the study of the Hospitalization Insurance Plan has been sent to the secretaries of the various county Medical Societies that they might be kept in touch with the work of the state Society committee.

The chairman of the committee representing the Medical Society has sent out questionnaires to all the members of the Medical Society committee and a few other medical staff members of hospitals asking for interpretations of what they regard as involving medical care as pertaining to anesthesia, X-ray, etc., and how their local hospitals now handle their semi-private cases with respect to these departments. The data from this questionnaire will be used in subsequent meetings with the Steering Committee when the details of the Plan are brought up.

In discussion between the sub-committee representing the hospitals in the Plan and our committee, certain points were cleared up. Dr. Rochelieu of Woonsocket stated that it is our desire to avoid abuses which were creeping in to other Plans now operating as pertaining to medical services and suggested that we be represented on the governing body. This is covered in the Plan by a representation from the Rhode Island Medical Society on the Board of Trustees and also the Executive Committee consisting of five members.

The desire of the Steering Committee group in their early work was to formulate purely the basis or groundwork for a non-profit Hospitalization Plan and this they wished to accomplish before they brought it to the medical profession in order that they might have a talking understanding of this situation. It was meant, in no way, to ignore the medical profession as up to that time and even now the actual details of the Plan have not been worked out. The effort on the part of that committee to get an enabling act passed at the last legislature was that they might save much time, perhaps a year, in the eventual launching of a Plan as this was part of the ground work in getting a Plan started. The passage of an enabling act is one of the first things to be accomplished but perhaps it is fortunate in one way that it has been somewhat delayed because a better act will result. The tentative final draft for this enabling act is now completed.

Another meeting of this committee with the sub-committee of the Hospital Group is to be held soon.

Respectfully submitted

Isaac Gerber, Providence
Hartford P. Gongaware, Westerly
James Hamilton, Providence
John F. Kenney, Pawtucket
Walter C. Rocheleau, Woonsocket
Alfred M. Tartaglino, Newport
Guy W. Wells, Providence
Robert H. Whitmarsh, Providence
Elihu S. Wing, *Chairman*, Providence

PROVIDENCE MEDICAL ASSOCIATION

Minutes of the January Meeting

The Annual Meeting of the Providence Medical Association was called to order by the President, Dr. Alex M. Burgess, on Monday, January 9, 1939, at 8:40 P. M. The minutes of the preceding meeting were read and approved. The annual report of the Secretary was read by Dr. Herman A. Lawson and was approved and placed on file as was also the annual report of the Treasurer as presented by Dr. William P. Davis.

The Secretary reported for the Standing Committee and presented the names of the following applicants for membership: Kate E. Breslin, William J. Butler, Joseph N. Corsello, Eugene A. Field. On the motion of Dr. W. M. Muncy these applicants were elected to membership. Reporting further for the Standing Committee, the Secretary announced as follows:

That the Standing Committee had authorized the Executive Secretary to prepare data on the

medical condition of the community, as obtained by the American Medical Association Survey, for the confidential use of the State's legislators in Congress.

That the Standing Committee requests the Publicity Committee to prepare a list of definitions of terms, such as state medicine, socialized medicine, group hospitalization, which are to be approved by the Standing Committee and then distributed to local press agencies as the interpretation of this Association and as a guide to all such agencies in preparing press news, editorials, or headings.

That the By-Laws be revised concerning the payment of dues by applicants for membership.

That a brief expression be prepared by the Standing Committee relative to the position of the Association regarding Group Hospitalization locally.

The annual report of the Standing Committee was read by the Secretary, and was accepted and placed on file.

The President announced that a printed copy of all the reports of committees for the year would be available to all members.

The President reported that the obituary of Dr. Vance Lee Fitzgerald as prepared by Dr. George Shattuck and Dr. Herbert Partridge and that of Dr. Daniel S. Latham as prepared by Dr. Arthur Jones and Dr. Pearl Williams were on file with the Secretary and available to any member.

Following the Presidential Address, the following officers and committees were elected for the year 1939:

President: Harry C. Messinger.

Vice-president: John G. Walsh.

Secretary: Herman A. Lawson.

Treasurer: William P. Davis.

Members of the Standing Committee for five years each: Alex M. Burgess, Frank B. Cutts.

Trustee of the R. I. Medical Library for one year: John E. Donley.

Councillor: William S. Streker

Reading Room Committee: Fred A. Coughlin, Robert G. Murphy, Joseph B. Webber.

Delegates to the House of Delegates of the Rhode Island Medical Society: Americo J. Pedorella, James M. Beardsley, Carl R. Doten, Henry J. Gallagher, Nathan A. Bolotow, Joseph Franklin, Charles Bradley, William S. Streker, Herman A. Lawson, Jesse P. Eddy, 3rd, Daniel V. Troppoli, Maurice Adelman, Francesco Ronchese, Alex M. Burgess, George F. White, Meyer Saklad, John A. Hayward, Harry C. Messinger, Ernest W. Bishop, Charles L. Southey, Henry McCusker, William P. Buffum, James Hamilton, John G. Walsh, Merle M. Potter.

The President appointed Dr. William S. Streker and Dr. William P. Davis a committee to escort the new President to the Chair. Following his installation into office, Dr. Messinger spoke briefly of the fine work of the Association during the year under the Presidency of Dr. Burgess and asked that the same cooperation from the membership be continued through the coming months.

The new President announced the following changes in Committee personnel for 1939: Dr. Eske H. Windsberg replaces Dr. H. C. Messinger as Chairman of the Committee for the American Medical Association Survey of the Needy and Supply of Medical Care. Dr. Paul Appleton replaces Dr. J. G. Walsh as a member of the Blood Transfusion Bureau. The Collation and Golf Committees are combined as a Committee on Entertainment with Dr. Nathan A. Bolotow as Chairman. Dr. Robert C. Robinson and Dr. A. M. Burgess are appointed to succeed Dr. Halsey DeWolf and Dr. Frank T. Fulton whose terms have expired as members of the Committee on Ethics and Deportment. Dr. Henry E. Utter is re-appointed a member of the Medical Milk Commission.

The President announced that the complete list of all committee appointments for 1939 was included in the printed Annual Report to be distributed to all members.

The Secretary announced receipt of a communication from the State Medical Society requesting that the members of the Providence Medical Association be informed of the Sunday afternoon radio broadcasts being conducted by the Society over station WPRO.

Dr. William P. Buffum read a preliminary report of the Committee on Tuberculosis, which was accepted and placed on file. The President appointed Dr. M. B. Milan and Dr. Thomas Grzebien as a committee to prepare an obituary of Dr. Richard Boucher.

On a motion from the floor by Dr. F. B. Littlefield it was seconded and passed that the Association donate $450.00 for the use of the Library Building. On a motion from the floor by Dr. William S. Streker it was seconded and passed that the Association appropriate $3400.00 for the executive office, for salary, rental of office, and incidentals. Dr. Paul Cooke moved that the annual dues of the

Association for the year shall be $15.00 for each member. The motion was seconded and passed.

Dr. William S. Streker presented the report of the sub-committee of the Standing Committee which was appointed to prepare a revision of the By-Laws relative to the regulations for application for membership in the Association. The changes proposed were as follows:

I. That Section 1 of Article II, titled Membership, be amended to read as follows: Applications for membership shall be made in writing to the Secretary and must be endorsed by two active members, and must be accompanied by a deposit of the amount of the annual dues, which deposit shall be returned if the applicant is rejected. The Secretary shall refer the application to the Standing Committee which shall report favorably upon it to the Association at the next regular meeting or as soon thereafter as may be, or adversely to the applicant.

II. That Section 4 of Article II, titled Membership, be amended to read as follows: Every person elected to membership shall without delay sign the Constitution and By-Laws.

III. That Section 1 of Article III, titled Annual Dues, be amended to read as follows: Taxes shall be levied at the annual meeting for the ensuing year, and shall be due when levied. Dues of new members shall be pro-rated according to the quarter of the year in which they have been elected to membership, and any balance remaining from the deposit shall be credited to the next year's dues. The Secretary and the Treasurer shall be exempted from taxation during their terms of office. On the motion of Dr. Charles Gormly these amendments to the By-Laws were approved and made effective as of this date.

Dr. Joyce, chairman of the Committee on Group Hospitalization, presented a brief expression as recommended by the Standing Committee relative to Group Hospitalization. The recommendation was accepted and placed on file.

The business of the meeting being completed, the President invited Dr. Burgess to the Chair to introduce to the membership Dr. A. Warren Stearns, Dean of Tufts College Medical School, who presented as his topic "The Evolution of the Concept of Functional Nervous Disease."

The meeting was adjourned at 11 P. M. Attendance 185. Collation was served.

Respectfully submitted,
HERMAN A. LAWSON, M.D.,
Secretary.

LOCAL EVENTS

January 10. Dr. Stanley Nowak addressed the meeting of the General Staff of the Homeopathic Hospital of Rhode Island with the subject "Pre-operative and Post-operative Treatment."

January 10. Dr. Halsey DeWolf entertained the Amos Throop Medical Club. Dr. John C. Ham read a paper on "Newer Diagnostic Methods and Recent Modifications in Treatment of Pneumonia." The paper was discussed by Dr. Wing and by members of the club.

January 16. At the meeting of St. Joseph's Hospital Staff Association, Dr. Edward Roberts of the Lederle Laboratories demonstrated a film on "Management of the Pneumonias." The film was shown at the Memorial Hospital on January 18.

January 20. Dr. Frank T. Fulton entertained the Friday Night Medical Club. Dr. Marshall N. Fulton of Harvard Medical School read a paper on "Some Atypical Features of Hyperthyroidism." The paper was illustrated by lantern slides and was discussed by Drs. Gormly, Bird, Wells, Messinger, Buffum and by the members of the club.

January 26. Archibald C. Matteson, Esq., addressed the Regular Quarterly Meeting of the Rhode Island Medico-Legal Society. His subject was "The Purposes of the American Law Institute and Some of its Accomplishments."

RHODE ISLAND HOSPITAL

Dr. Charles L. York, Jr., of Plymouth, New Hampshire, a graduate of the University of New Hampshire and Tufts College Medical School, began a two years' internship at the Rhode Island Hospital on December 15th, 1938. Previously, Dr. York spent six months at the Higgins Hospital in Wolfeboro, N. H.

On January 1st, 1939, Dr. Henry A. Campbell, of Central Falls, went to the Boston City Hospital, taking a Surgical Internship, a term of two years, his internship at the Rhode Island Hospital having ended. Dr. Campbell is a graduate of Harvard Medical School.

Dr. Harry G. Hardt, of Chicago, Ill., whose internship terminated July 1st, visited at the Rhode Island Hospital the first week of January 1939. At present Dr. Hardt is interning at Truesdale Hospital, Fall River, Mass.



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HEALTH DEPARTMENT ACTIVITIES

PROVIDENCE, DECEMBER, 1938

It is gratifying to note that the incidence for the more serious type of communicable disease for the general population is rather low. During the month there were 208 cases of mumps, 117 cases of chickenpox and 152 cases of whooping cough reported to this department. Doubtless there are many more cases which have not been reported and we wish to remind physicians to kindly report their cases. The case of poliomyelitis reported during the early part of the month is the only case we have had for the year, and was that of a seventeen year old school girl.

Vital Statistics	1938 Dec.	1937 Dec.
Deaths all	306	317
Deaths under 1	21	20
Deaths over 70	106	111
Births	433	438
Marriages	67	71
Infant Mortality	49	45.6
Death Rate	14.82	15.34
Birth Rate	20.97	21.22

Principal Causes		
1. Heart Disease	82	97
2. Cancer	39	36
3. Pneumonia	21	21
4. Nephritis	28	23
5. Cerebral Hemorrhage	22	24
6. Auto Accidents	6	4

Communicable Diseases	*Cases*	**Deaths**
Diphtheria	0	0
Scarlet Fever	17	0
Measles	1	0
Whooping Cough	152	0
Pulmonary Tuberculosis	0	6
Septic Sore Throat	5	1
Typhoid Fever	0	0
Poliomyelitis	1	0
Epid. Encephalitis	0	0
Epid. C-S Meningitis	0	0

Includes Non-Residents

MICHAEL J. NESTOR, M.D.
Superintendent of Health

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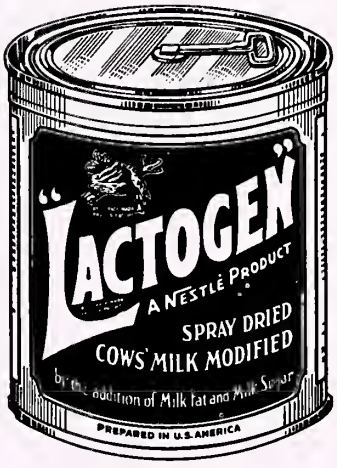
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1938

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All of the herds are under State and Federal supervision and are free from Tuberculosis and Brucella abortus infections.

During August the Commission was fortunate in having Mr. E. P. Brown of the National Headquarters spend several days in Providence visiting and inspecting the three local farms under our direct supervision. His helpful suggestions have been of great value to the Producers and members of the Commission.

The Great Hurricane and Tidal Wave which occurred on September 21, 1938, caused considerable damage to two of our certified farms and deprived them of electricity and suitable water. Emergency power plants were installed at one farm and an ingenious method of cooling milk was established on another farm. All of our farms continued making certified milk under great difficulties and during the trying period of two weeks following this catastrophe owners and workers on the farms maintained a cheerful and optimistic attitude. There was no let down of our high standards and the results obtained by the producers were a great credit to the workers.

The Commission is indebted to Dr. Knights, Deputy Inspector of Milk of Providence, for his interest and co-operation during the past year.

The personnel of the Commission includes Reginald A. Allen, M.D., Reuben C. Bates, M.D., *Secretary* and *Treasurer;* Harold G. Calder, M.D., *Chairman;* Halsey DeWolf, M.D., Banice Feinberg, M.D., A. Roland Newsam, M.D., Henry E. Utter, M.D., George W. Waterman, M.D., and Raymond L. Webster of the Rhode Island Dental Society.

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January	4.2	13.03	1,406	4.1	12.83	2,562	4.1	13.15	1,718	987	5.2	14.07	7,950	4.0	12.72	2	4.1	12.80	2,912
February	4.2	13.15	2,582	4.1	12.70	2,175	4.2	13.37	2,006	255	5.2	14.28	1,087	4.0	12.53	2	4.	12.78	2,350
March	4.1	13.03	3,165	4.	12.57	2,320	3.9	12.96	2,215	168	5.5	14.64	1,135	4.	12.70	2	4.1	12.83	2,850
April	4.2	12.98	1,312	3.9	12.57	1,450	3.8	12.92	2,025	17	5.1	14.02	3,737	3.9	12.65	3	4.0	12.63	2,575
May	4.4	13.21	3,100	3.9	12.45	1,875	3.9	12.99	4,138	31	5.3	14.30	2,577	3.8	12.43	2	3.9	12.46	4,200
June	4.6	13.08	4,083	3.9	12.55	2,260	4.	13.13	3,722	7	5.3	14.17	3,155	3.8	12.48	1	3.9	12.75	5,230
July	4.1	12.79	5,385	4.1	12.59	2,825	4.5	13.26	2,450	7	5.3	14.13	3,768	3.9	12.46	21	4.1	12.72	4,950
August	4.4	12.97	6,094	3.9	12.46	2,762	3.6	12.47	5,600	69	4.8	13.69	8,725	3.9	12.59	12	4.0	12.67	6,587
September	4.3	13.05	8,425	4.1	12.70	1,860	4.	12.81	3,755	29	5.1	14.17	3,250	4.0	12.65	1	4.1	12.68	1,050
October	4.4	13.24	5,612	4.	12.71	1,662	4.3	13.31	3,693	138	5.5	14.62	6,243	3.8	12.48	6	4.1	12.76	2,175
November	4.4	13.17	4,477	3.9	12.62	2,637	3.5	12.43	1,494	79	5.5	14.99	705	3.9	12.45	6	4.0	12.69	1,555
December	4.4	13.28	8,355	4.1	12.88	2,237	3.8	12.88	1,500	83	5.2	14.56	1,235	3.8	12.49	3	4.2	12.84	1,862
Yearly Average	**4.3**	**13.08**	**4,493**	**4.**	**12.63**	**2,218**	**3.9**	**12.97**	**2,859**	**155**	**5.2**	**14.30**	**3,630**	**3.9**	**12.55**	**5**	**4.**	**12.71**	**3,483**

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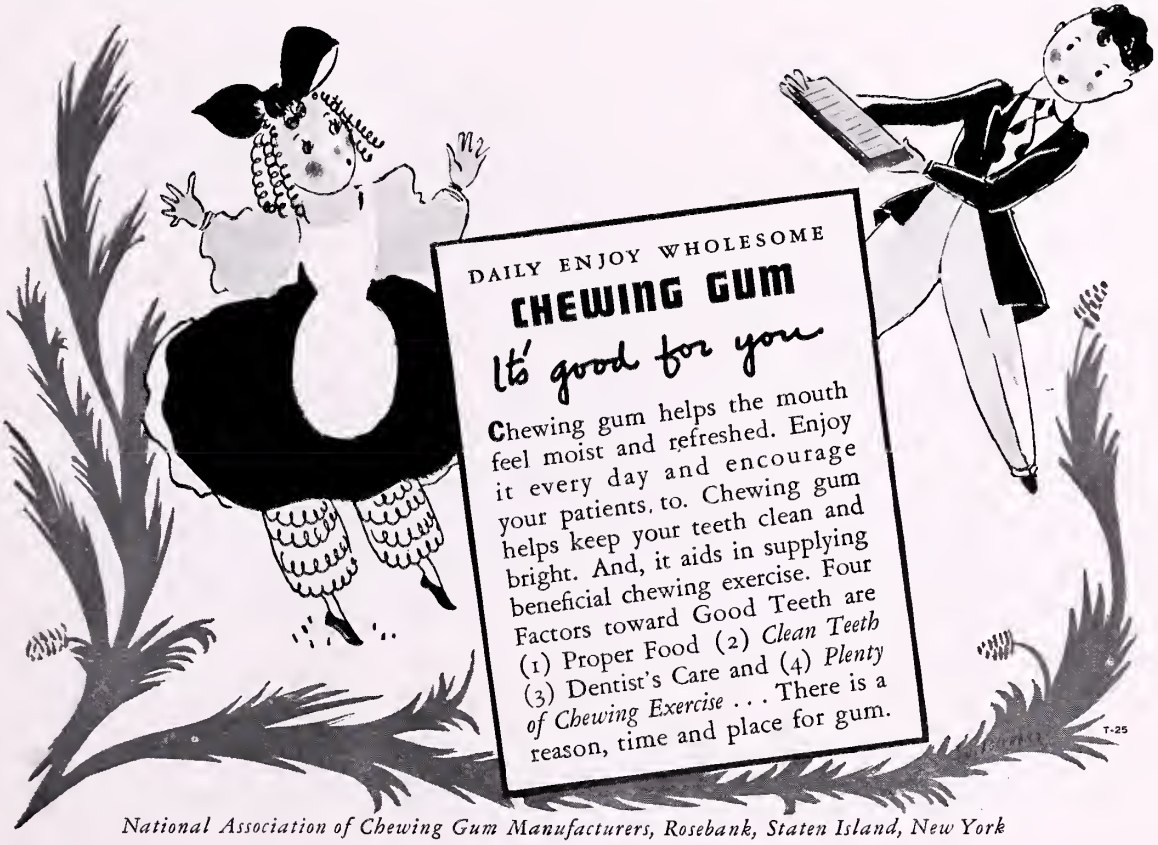
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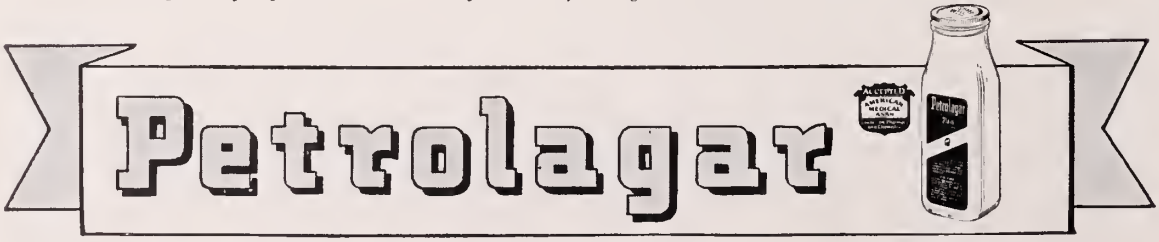
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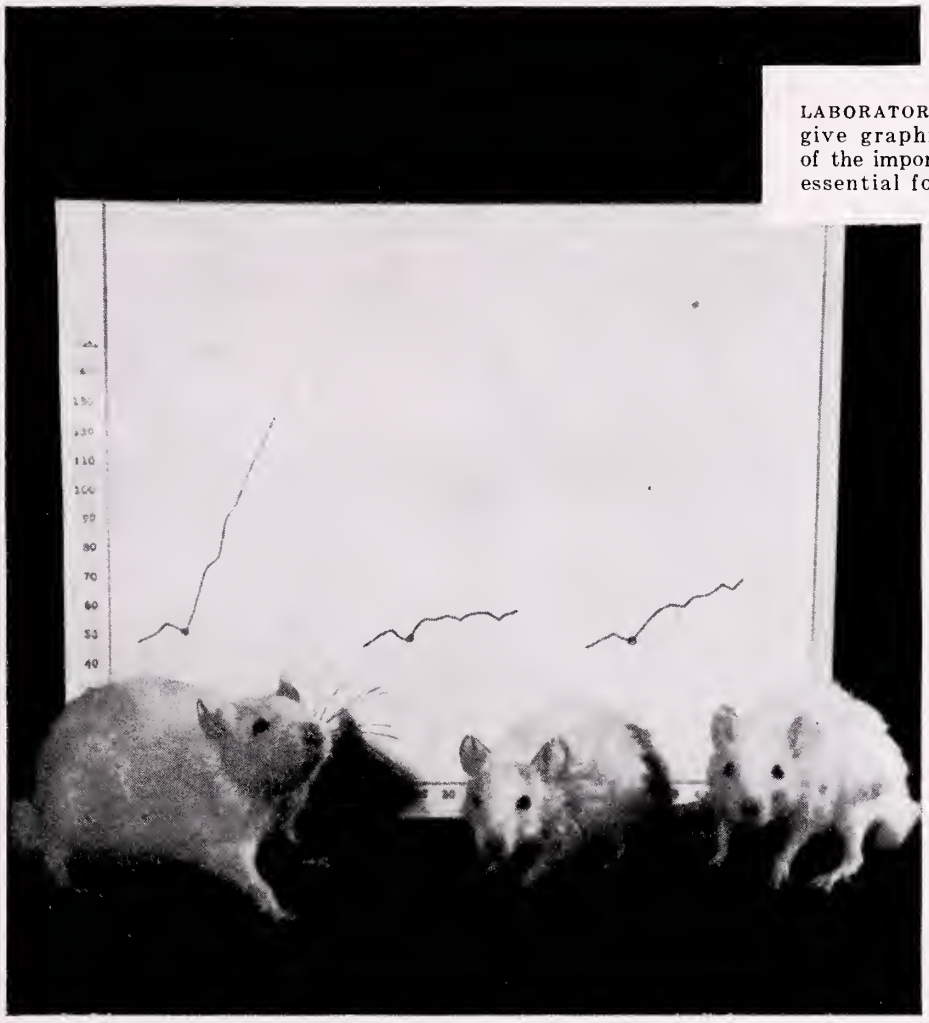
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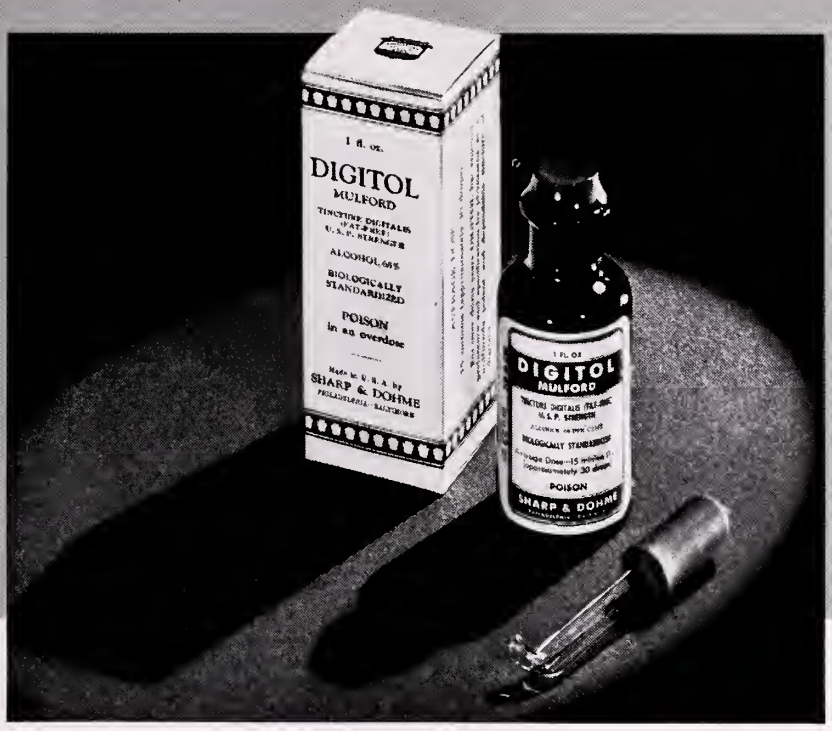
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(1) 1938. J. Amer. Med. Assn. 110, 1278.
(2) 1938. Ibid. 110, 1441.
(3) 1936. Proc. Soc. Exper. Biol. Med. 35, 217.
(4) 1928. Science. 67, 249.
(5)a. 1935. Nature. 135, 652.
b. 1935. Biochem. J. 29, 1273.

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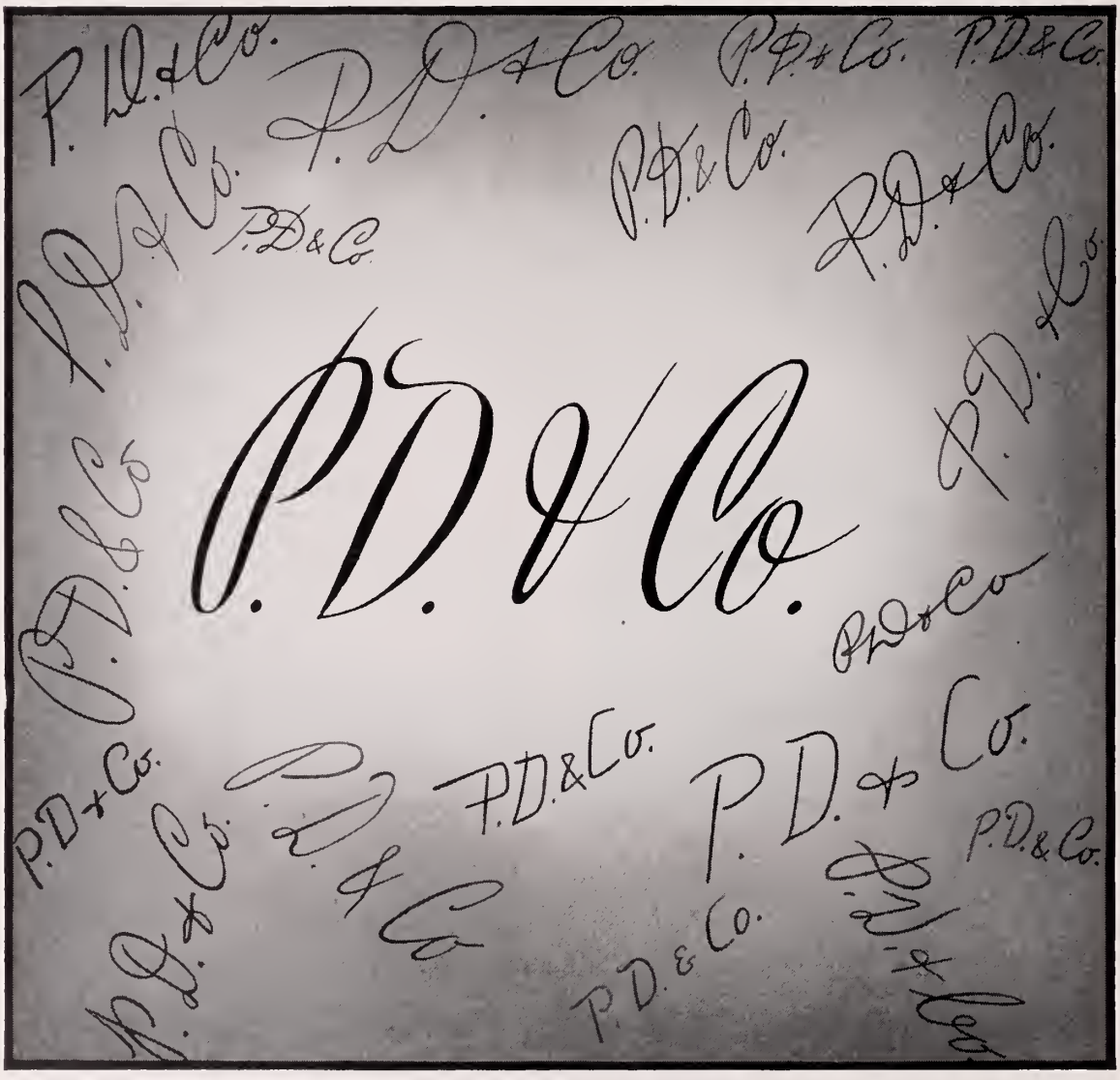
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[1] *Jl. A. M. A.* 111:2175 (Dec. 10), 1938.

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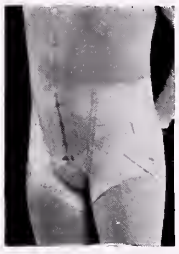
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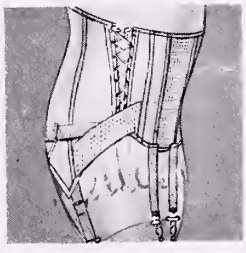


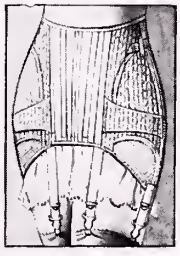
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THE RHODE ISLAND MEDICAL JOURNAL

Volume XXII MARCH, 1939 Number 3

PROVIDENCE MEDICAL ASSOCIATION

Address of the President

ALEX M. BURGESS, M.D.
PROVIDENCE, RHODE ISLAND

Fellow members of the District Society. This is a year in which so much has happened and so much lies just below the horizon of the immediate future, about to happen, that the problem of your retiring executive officer in presenting the customary annual address is to select and condense and to present as briefly and clearly as possible the most important phases of what has occurred, what is occurring and what is about to take place. The matter of greatest interest to us as physicians is the attempted change in the application of medical care to the American people—especially as it applies to that portion of the people which resides in Providence. Nationally our concern is with the occurrences and influences which led up to the National Health Conference in July, the recommendations of the Conference and the reaction of our House of Delegates expressed in the resolutions adopted at the Chicago meeting in September. These things have been discussed before you and with them you are quite familiar. Their relation to local affairs, however, to the medical care and general health of the people of Providence is a matter which must engage our attention. Let us therefore consider the need, if any, of a change in the method of supplying medical care to the people of our city and the qualifications of our medical society, with the recent extension of its activities, to meet the challenge. Let us seek to answer the question "What can we do about it?"

The clear and concise summary of what has happened nationally, presented to this Association at its December meeting by Mr. Myron Weiss and the address by Dr. Rock Sleyster before the State Society three days ago, make a detailed survey superfluous. Certain facts, however, will bear reemphasis. In 1929 Dr. Wilbur's committee on the costs of medical care found that all was not well and made recommendations that are quite similar to those advanced by the Technical Committee of the National Health Conference. The economic depression which followed 1929 made bad matters considerably worse and there has been on the part of various groups in the population a growing demand that something be done. The pattern of that something is definitely foreshadowed by the Social Security Act of 1935 by which public health is made a part of public welfare in general and the responsibility for constructive planning is placed in the hands of welfare workers, sociologists and their colleagues—rather than the medical profession. Such a plan, as Mr. Weiss pointed out, makes doctor and nurse mere technicians, "non-commissioned officers and buck privates"—without a part in the general direction of their work.

The summary of medical opinion gathered by the American Foundation and published as "Expert Testimony out of Court" showed that a majority of the doctors who contributed believed a great improvement in the medical situation to be needed. A committee of physicians formed itself and formulated "Principles and Proposals," which received unfortunate publicity and were rejected by the American Medical Association.

Following the completion of the National Health Survey which showed a large number of people in the country unable to obtain adequate medical care the National Health Conference was called and its deliberations were conducted to a great extent, it appears, without real consideration of the extensive studies which had been carried on by the American Medical Association or consultation with its experts. However that may be, we know that at the special meeting of the House of Delegates in September, the American Medical Association went a long way toward accepting most, not all, of the recommendations.

This action of the House of Delegates, formally approved by our State Society, definitely disapproves of compulsory health insurance, but with this important exception it registers qualified approval of practically all the recommendations, and reverses its attitude regarding the much-criticised "Principles and Proposals" as the following tables show:

Presented before the Providence Medical Association at the Annual Meeting, January 9, 1939.

TABLE I

P. & P.	*National Health Conference*	*House of Delegates*
Extension of Public Health Services proposed (7) and establishment of *Federal Department of Health* advocated (9).	I. Expansion of Public Health Services. Local organization stressed. Maternal and child welfare included.	*Approved* in general. Treatment of disease excluded where private practice is available. Cooperation of A.M.A. promised. *Federal Department of Health* advocated.

TABLE II

P. & P.	*National Health Conference*	*House of Delegates*
Public Funds for hospitals including laboratory, diagnostic and consultation services proposed (5). *Utilization of* private institutions urged (6).	II. Expansion of hospital facilities. Federal grants for new hospitals when needed and enlargements of existing hospitals. Use of non-government hospitals included with federal support for care of indigent.	Approved where need exists. Use and support of existing hospitals stressed. Stability and efficiency of existing church and voluntary hospitals thus secured.

TABLE III

P. & P.	*National Health Conference*	*House of Delegates*
"An immediate problem is provision of adequate medical care for the medically indigent, the cost to be met from public funds (*local* and/or *state* and/or *federal*)." Proposal No. 2.	III. Federal support to states for care of needy. *Medical and allied professions and institutions* to participate in this care.	Fact that federal support may at times be needed is recognized. *Local* government tax funds to be the basis of care of needy with *state* aid if need cannot be met locally and *federal* aid if state cannot meet the need.

TABLE IV

P. & P.	*National Health Conference*	*House of Delegates*
No proposal of a comprehensive general health program reaching above the level of the medically indigent. "Health insurance alone does not offer a satisfactory solution."	IV. A program of general public medical care (like public education) supported by *tax funds* (including federal funds) or *health insurance* (compulsory).	No direct comment on this general proposal. Compulsory health insurance disapproved (beaurocracy, political manipulation). Group hospitalization and voluntary indemnity insurance approved.

What does all this mean? It means that as a profession we have recognized that the great public demand for a change, even though fostered by unfair propaganda and a gross misrepresentation of the attitude of the organized profession, must be met and a change, such as will not result in public harm, must and will be considered. It means that what the press delighted to call a "schism" in medical ranks—the difference of opinion regarding the Principles and Proposals—no longer exists. It means that the American Medical Association is willing to take liberal and constructive action and, recognizing that changes of a drastic and harmful nature are likely to be forced upon it, is ready to meet the issue and to assume its full share of responsibility in the hope of some definite improvement in conditions and a minimum of harm.

What, then, does all this mean to us here in Providence? What are our medical needs and what is our ability to cope with them?

We can form some opinion as to medical needs by a study of the results of the survey made by our Association as a part of the American Medical Association's National Survey. This report was summarized before this Association by Dr. Messinger, Chairman of our committee in charge of the survey. Some of the pertinent facts brought out are as follows:—The number of doctors is adequate, hospitals and clinic facilities are adequate, health services in schools and colleges are

adequate for this community. The indigent of the city of Providence are well cared for, although neighboring communities are not in many instances doing their parts so that in practically all cases in which an indigent person could not get medical care, that person was from outside Providence and failed to get support from his own community. The doctors of Providence are bearing their full share of this burden, for a conservative estimate shows that they have been caring for approximately ten per cent of the population free of charge. On the whole the survey showed that, except for dental care, the indigent are well provided for.

The problem of the low income group, however, is another matter. As brought out by the report and as every practitioner knows, it is the self-respecting people who will not ask for charity to whom illness is the greatest burden and who receive by far the poorest care. Although the earlier survey by the committee headed by Dr. DeWolf in 1936 showed that people in this group do not fail to get care, that committee recognized that many of them had to obtain it by dropping to the level of receiving charity when their funds were gone. Furthermore, the increasingly complicated and expensive procedures that are needed for modern medical diagnosis and treatment are so often beyond their reach that the care they get is at times anything but adequate. Here lies the real need, the supplying of up to date complete medical services to the low income group. It is for this that the great popular demand exists. This need is present in this community and in all communities. It is to meet this need that compulsory health insurance is advocated and, because of the insistence of this need, may be forced upon us with all its disadvantages if there is nothing else to offer. Certainly compulsory insurance is not desirable—but as certainly some methods of prepayment by which people can be protected from catastrophic illness must be instituted.

Knowing this background and this need let us turn to examine the status of our own Society to see how capable we may be of doing anything about the matter. The past year has seen the fruition of many earnest efforts. The enlarged standing committee, now a really representative body, has put in many hours of earnest work, as have the other important committees. The committee on the American Medical Association survey, the committee on tuberculosis, the publicity committee with its radio program and other educational work and so forth—with all these you are familiar. A great deal has been accomplished and we are only just beginning. Without our executive secretary, Mr. Farrell, practically all this would have been impossible. To Dr. William Streker and to Dr. Gormly, Dr. Chase, Dr. Buffum and many other earnest workers and to our whole membership for its loyal support, must go the credit for these great advances. Our year has been a good one—but I repeat—it is only a beginning. We have begun to put our affairs on an efficient basis and to take our place as a real force for good in our community. We have developed the mechanism for doing things—What more shall we do?

The answer is—the low income group—to that we must give our attention. Federal interference and compulsory insurance are almost upon us. Can we so put our house in order that they will not be considered needed?

Group hospitalization is being studied by our State Society in conjunction with the hospitals and is apparently about to arrive. This is the first step.

In California the State Society is developing a system of voluntary insurance to cover medical services. In Washington, D. C., the district society is attempting to do the same thing. In New York "The step to legalize prepayment insurance is being advocated by the State Society . . . as an alternative to State-controlled compulsory health insurance. . . ." Elsewhere throughout the country similar plans are being studied. The American Medical Association has investigated and approved many such plans.

Ladies and gentlemen I suggest to you that the only way open for us to offset the menace of federal interference and compulsory health insurance is to attempt to meet it halfway. I therefore propose to you that this Association, realizing the need for aid to the low income group, begin forthwith a study of the possibility of the formation of a non-profit health insurance plan organized and operated by our society. Such a plan, if successful, may be extended to cover so great a proportion of those in our community who need it, that there will be no occasion or excuse for the intrusion of a government plan of compulsory insurance or other supervision of medical practice, an intrusion which would put our people and ourselves under a complicated bureaucratic control subject to political manipulation.

Our year has been a good one. Our affairs are in order. Our members are meeting the responsibilities of their work with earnestness and interest. Our executive secretary is keeping the whole thing coordinated and running smoothly, performing his function with vigor and an able enthusiasm which helps us all. It has been a privilege to have a part in this work. Few district societies are better able than we to cope with the urgent problem, an attempt at the solution of which I have just suggested to you. It will be a pleasure, under the able leadership that is to follow, with you all to help in its solution.

THE RELATION OF THE HOUSEHOLD DUSTS TO ASTHMA IN CHILDHOOD

William P. Buffum, M.D., and
Stanley S. Freedman, M.D.
Providence, Rhode Island

Household dust is now recognized as an important exciting cause of asthma. The good results obtained by simple methods of study and treatment justify further attention to this important allergic problem. We are presenting, therefore, a series of 101 children with bronchial asthma, in whom we have investigated the factor of household dust sensitization.

The discovery of a specific allergen in house dust was made in 1918 and published in 1922 by Cooke.[1] The patient whose case led to this discovery was a young man who had had intractable asthma for fourteen years and whose asthma dramatically disappeared when he arrived at military camp only to reappear whenever he returned to his home. Skin tests with the usual inhalants were all negative but intracutaneous tests with dust extracts gave positive reactions. Cooke then investigated other cases of asthma which were hitherto undiagnosed, finding that some gave positive skin tests to dust extracts and that their clinical picture could be explained on the basis of house dust sensitization. Further studies led him to the conclusion that sensitivity to house dust is due to some unknown but specific allergen present therein. He felt that the active principle in dust was not due to the presence of the usual inhalants, such as feathers, rabbit hair or orris root powder, which are apt to be present in house dust.

In 1926 Peshkin,[2] investigating the specific causes of 100 cases of asthma in children, found that 46 percent gave positive dust reactions. Rabbit hair was the only substance giving a higher incidence of positive reactions. In many of Peshkin's cases dust was apparently the sole exciting cause; in others it was responsible for the symptoms to a varying degree. He believed that the dust allergen was specific and different from other known inhalants.

In 1927, Feinberg[3] called attention to the difference between hypersensitivity to dust, which is a true allergic phenomenon, and the irritation which may be produced on the nasal mucosa by dust inhalation.

In 1927 Rowe[4] was of the opinion that persons allergic to dust are in reality allergic to the inhalants which are present in the furnishings in the home, as these furnishings are constantly giving rise to dust. Rowe made the observation that not all dusts are equally active and that no one dust extract produced reactions in all his dust positive cases. Therefore, for testing, Rowe advised the use of an extract derived from many sources.

An interesting study on the nature of the house dust allergen was made by Cohen[5] in 1935. By a series of ingenious experiments in which he neutralized samples of serum from dust-positive reactors with various extracts and then studied these serum samples by means of the passive transfer test, he concluded that the active principle in house dust is formed during the aging process of cotton linters, and probably also in the aging of other substances, such as feathers or kapok. Cohen also demonstrated that the active principle is not a mould. In 1935 Cazort[6] repeated Cohen's experiments with similar results.

In 1936 Pratt[7] published his study on house dust sensitivity in childhood asthma. He was the first to study dust sensitization in children. Using the intracutaneous test on seventy-one children with perennial asthma, Pratt found 55 or 79 percent with skin reactions positive to dust and in twenty of these he was able to transfer the reaction to their parent's arm. He found no correlation between the dust reactions and those of other inhalants, pollens or foods. Thus his series supports Cooke's contention that the dust allergen is independent of other known inhalant allergens.

From the Pediatric Allergy Clinic, Rhode Island Hospital. Read before the Providence Medical Association, June 6, 1938.

A most instructive piece of work on the kapok fiber was done in 1936 by Wagner and Rackemann,[8] when they showed the striking increase in allergenic activity of old kapok as compared to new.

In 1937 Walzer,[9] in a series of 151 atopic cases observed over a period of 8 years, found that in every instance in which a dust reaction could be transferred reagins could also be demonstrated for one or more other such dust-producing inhalants as cat, dog and rabbit dander, feathers, wool and kapok. When dust reagins were absent in a serum no positive transfer could be demonstrated to any of the above dust-producing inhalants.

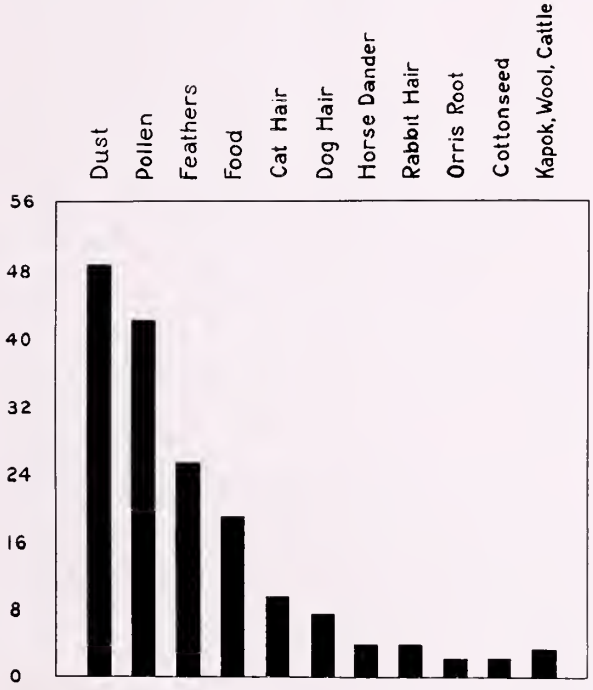


Chart 1. - Number of patients giving positive skin reactions to dust and other allergens.

Choice of Patients, Testing Material and Technique

In this series of 101 children with asthma the patients were entirely unselected. Eleven others were excluded because the testing was incomplete; six had moved and could not be followed. No patient was omitted because of incomplete treatment or lack of coöperation. Seventy-eight children had perennial asthma; twenty-three had seasonal asthma. The youngest patient was eight months old on admission, the oldest twelve years. The age of onset of the asthmatic attacks ranged from two months to ten and a half years, with an average age of onset of four and eight-tenths years. Seventy-two patients were from the Rhode Island Hospital Pediatric Allergy Clinic; twenty-nine were from private practice. All patients were under observation for more than one year; many had been observed as long as five years.

In this series of cases, the scratch test was employed almost exclusively. Although the intracutaneous test is more sensitive, it is more likely to give false positive readings. The high potency of the material now available for scratch testing makes this method of skin testing satisfactory for routine work.

We used the following testing material:

1. *Autogenous Dust.* This was usually obtained from the patient's pillow, mattress, bedroom and living room floors. Tests were made by placing a sample of each dust soaked for a few minutes in saline or 14% alcohol on a scratch on the volar surface of the forearm. Out of seventy-five children tested, nineteen reacted to an autogenous dust.

2. *Stock Dust.* This was used as prepared by the commercial houses. Of the 101 patients tested with stock dust, 45 gave positive reactions.

Reactions ranged from + to ++++. A + reaction is one in which there is an area of erythema definitely larger than the control. Usually the wheal is also somewhat larger.

Relation Between Positive Reaction to House Dust and to Other Inhalants and Foods

Analyzing our own cases to demonstrate the relationship between dust reactions and reactions to other known inhalants we found that of thirty-four cases who reacted to one or more of the animal inhalants, twenty-five or 73% were dust positive, nine or 27% were dust negative. Furthermore, the twenty-five patients who were dust positive gave markedly strong reactions to the animal inhalants while the nine who were dust negative gave weak reactions to these inhalants. This relationship between the reactions to house dust and the reactions to animal inhalants would be expected, in view of Walzer's recent work. (Table 1.)

Making a similar analysis of the patients reacting to foods, we found that food reactions are independed of dust reactions. Of seventeen patients reacting to food, nine were dust positive and eight were dust-negative; this being almost equal distribution. (Table 2.)

Of forty-two patients reacting to pollens, twenty-five were dust positive and seventeen dust negative, indicating that pollen reactions also are probably independent of dust reactions.

TABLE 1

Relation of Positive Animal Inhalant Tests to House Dust Reactions

House Dust Positive

Case	Feathers	Dog	Cat	Horse	Rabbit	Cattle
R. A.	++					
R. A.	++					
H. B.	++					
E. B.	+++					
J. C.	+				++	
D. C.	++					
R. C.	++					
B. C.	+					
R. D.	++					
C. D.		+++	++			
A. L.	+++	+			++	
D. M.	++					
D. M.	++			++		
E. M.		+++				
V. M.	++					
J. M.		++	+++	+++		
G. M.		+				++
A. P.	+++					
G. S.		++	+++	+		
E. S.	++					
E. T.	++		++			
E. T.	++					
R. T.	++	+				
J. V.	++++	++	++	+	+	+++
A. W.	++					

House Dust Negative

Case	Feathers	Dog	Cat	Horse	Rabbit	Cattle
E. D.	++					
R. F.	++					
E. F.	+			+		
H. L.			+			
M. P.	+					
J. S.	++					
L. T.	++					
H. B.		+				
H. W.		+				

In our series of 101 cases, we found eight in which household dusts were definitely proved to be a major exciting cause of asthma. This was shown by the fact that five were immediately improved by a general preparation of the house, two by changing the mattress and one by removal of a stuffed sofa. In these cases the improvement was so marked and striking that there is no reasonable doubt that the cause of the symptoms was found. Although we felt that a great many more were clearly household dust cases, this group of proved cases is of greater interest. All of the eight proved cases had frequent wheezing, not limited to definite attacks but occurring at odd times and sometimes of very brief duration. This frequent wheezing without relation to colds or definite attacks is suggestive of an inhalant allergen and is worth noting. Another frequent symptom was rhinitis. In the records of four of these patients stuffiness of the nose with pale turbinates appears as a prominent feature. With our eight proved cases the lack of seasonal incidence was interesting. Four had no noticeable increase or decrease in symptoms at any time of the year. One was worse in winter. Two were slightly worse in the fall, but these both had positive skin tests to ragweed. One was worse in the summer. This was obviously due to a mattress in the summer house. These cases conform to the generally accepted idea that household dust sensitivity ordinarily causes symptoms which are the same throughout the year or worse in the cold weather.

TABLE 2

Relation of Positive Food Tests to House Dust Reaction

House Dust Positive

Case	Milk	Egg	Wheat	Sweet Potato	Potato	Corn	Spinach	Tomato	Pea	Beet	Strawberry	Beef
R.B.	++											
M.G.				++++								
H.M.							+					
D.M.	++	++	++								++	
E.J.						+				++		
J.V.		++++										
C.D.	+											
J.M.		++++										+
R.X					+			+	+			

House Dust Negative

Case	Milk	Egg	Wheat	Corn	Spinach	Tomato	Strawberry	Plum	Beef	Lamb	Salmon
D.A.					+						
H.B.											++
F.C.					+++						
S.G.	++										
H.H.				++							
L.T.							++	++			
H.W.		++	+			++			++	+	
V.S.		++++									

In studying our cases it is evident that, in the severe cases, dusts are an extremely important cause. Among our 101 cases, thirteen were classified as severe. Of these, eleven gave positive housedust skin tests and four were proved cases of clinical sensitivity to household dusts. Of the three cases which were definitely the most severe of all, two were proved and the other was a probable household dust case. The predominance of household dust sensitivity in these cases suggests that household dusts are the common exciting factor in severe asthma. Probably this sensitization is just as common in milder cases but is less easily recognized when accompanied by other sensitivities.

Diagnosis

The diagnosis of household dust sensitivity is made by history, testing and experimentation with the environment. The importance of the history has been emphasized by Rackemann[10] and others. A careful history, with dates, activities and occupations of adults in the family, and presence of animals, may indicate other sensitivities. Household dust sensitivity may be suggested by the persistence of symptoms at home and the relief on moving away or visiting for shorter periods. Changes in household furnishings, especially bedding and stuffed furniture, may bring a striking improvement. Exacerbacations during week ends at home or after a weekly house cleaning are not uncommon.

An examination of the house is an absolute essential in treating any case of asthma unless some sensitivity, such as ragweed, is evidently the only important cause. An inspection of the house suggests such objects as pillows, mattresses, cushions, stuffed furniture, stuffed toys and rugs, which need to be removed or at least considered for skin testing and experimentation. Of especial importance in our group were feather pillows and cushions, kapok mattresses and stuffed furniture. Rugs are probably more important as collectors than as producers of dust.

In making a diagnosis of household dust sensitivity, the tests are of greatest value in suggesting the diagnosis, not in proving it. Table 3 shows the positive skin tests on our eight proved household dust cases.

TABLE 3

Tests on Proved Household Dust Cases

Case	Stock Dust	Own Dust	Feathers	Cat	Dog	Horse	Rabbit	Orris	Egg	Spinach	Ragweed
C.A.	++++	....	....	....	....	....	....	....	....	....	....
E.B.	++	++	....	....	....	....	....	....	....	....	....
M.D.	....	+++	....	....	....	....	....	....	....	....	....
H.M.	++	++	....	....	....	....	....	....	....	....	....
J.V.	+++	....	++++	++	++	+	+	++	++++	....	....
E.B.	+	....	+++	....	....	....	....	....	....	....	....
J.M.	++	....	....	+++	++	+++	....	....	+	....	+
M.S.	+	+	....	....	....	+	....	....	....	....	....

In household dust sensitivity, stock house dust skin tests are usually positive as well as feathers and other animal inhalants. During the last year, due to improved testing materials, we have had very many more positive reactions. Results from tests to the patient's own dusts have been variable, possibly due to our inability to get a concentrated extract.

The final diagnosis of household dust sensitivity is made by experimentation. In our group the imperfect preparation of the house was usually carried on simultaneously with other treatment so that a definite proof of the diagnosis was lacking. When possible the elimination of the suspected furnishings or the preparation of the whole house should be sudden and complete, without other treatment at that time.

Treatment

Certain aspects of the treament in household dust sensitivity can be best shown by describing the case histories of three patients. These cases were the most severe of all; two were proved household dust cases and the third a probable one. They are used as illustrations because they typify the reactions of some patients to treatment. We consider the treatment of the housedust sensitivity; the treatment of the child as a whole is obviously important but is not mentioned in this discussion.

Jack, a private patient, is now fourteen years old. He had facial eczema in infancy. Asthma began during his second year. When seen during his third year he was wheezing practically all the time and nearly half the time was having severe asthma, only partly controlled by adrenalin which his mother injected. He was slightly worse in winter than in summer. His first testing gave reactions to four foods and dog dander. During the next five years the foods to which he reacted were left out of his diet, the dog sent away, his bedroom was kept very clean, but he used a kapok pillow and a kapok mattress. He had much medication and sometimes would need adrenalin two or three times a day for a month. At this time he was wheezing more than half the time and was an underdeveloped, undernourished, barrelchested, pale and unhappy looking child. His positive tests now were dog, horse, cat, one food and ragweed. When he was seven years of age the house was thoroughly prepared. He had a special pillow, a horse hair mattress covered tightly with dust proof material. All unwashable cloth and stuffing material was, as far as possible, removed from the house. No unwashable bedding or rugs and no stuffed furniture was used. Although we had done no housedust testing, everything in the house was thought of in terms of dust producing animal and vegetable fabrics. The floors were dusted daily with a wet mop and small washable rugs were shaken out of the windows. After this he made a striking improvement and a further gradual im-

provement has continued. He received 30 injections of dog dander, 10 injections of horse dander and 30 injections of ragweed. but has had no treatment for the last eighteen months. During the last year he has been almost well. He had moderate wheezing twice, once for forty-eight hours after playing in the woods and once for twelve hours after a party. He has also very slight wheezing for a few minutes several times. His skin tests now are about the same and include a positive stock house dust reaction.

The treatment of this case was unusually thorough. The mother was very intelligent and faithful. Through the help of a physician relative, the patient received a great many injections without much inconvenience. Although at puberty there is frequently a definite tendency to spontaneous recovery, the effective factors in treatment in this case seem to have been the preparing of the house and the injections of animal danders and ragweed.

The second of the three patients, Edward, has a history so nearly identical with patient A that it is unnecessary to mention it further: Edward has had only one slight attack in the last 18 months.

The third patient, Lucy, although her course was at the start very similar, has not done well. Lucy is now 14 years old. One parent had hay fever. The patient had eczema on her face and body for the first 4 years. Her asthma started in June at seven months of age. Her positive tests at this time were milk and eggs. Dietary control kept her fairly well. During two summers she had practically no trouble, but during the fall and winter and spring she had a little wheezing most of the time and bad attacks with colds. In 1932 she had more asthma for three months following measles. At this time her positive tests were dog, horse and cat. Housedust tests were negative. She looked badly, had a barrel chest and wheezed some nearly every day. During these last ten years she has had very little treatment. Except for using a special pillow, no house preparation was possible. In 1936 her positive tests were dog, cat and stock house dust. There were dogs in the yard and garage, but no cats. In 1937 after 12 injections of dog dander she was considerably better and went a month without asthma. In 1938 she is wheezing a little every day and still looks badly. Her house still contains many dust producing objects including stuffed furniture and rugs.

The favorable results obtained in the first two of the cases mentioned and similar experiences in many other less striking instances indicate that the proper preparation of the home is the most effective method in the treatment of house dust asthma. Our plan of preparation of the house is as follows: —We test the patient with materials and dusts from his own home, including pillow and mattress stuffing and dust from the bed room, living room and stuffed furniture. These tests are so frequently negative, probably because of failure to get a sufficiently concentrated solution of the allergen, that we use a routine procedure in eliminating dusts. If any tests are positive, especial attention is given to objects indicated by the tests. The patient's parent is given typed directions. The feather or kapok pillow used by the patient is eliminated entirely or covered with dust proof material. The kapok or cotton mattress is also banished or covered. Usually the clinic patients covered the mattress with oil cloth which was sewed to completely enclose it. Pillows and mattresses in other rooms are not included in the first routine preparation but unwashable rugs and stuffed furniture are not allowed in the house. Later this house is visited by one of us, or in the case of a clinic patient, by the social worker. At this visit the results of the written directions are checked and the house is inspected for other unwashable animal and vegetable fabrics such as quilts and draperies.

We have found that the parents of the clinic patients will usually prepare the homes in a satisfactory manner if we take pains to explain the situation to them and keep after them. With the private patients in larger houses we have had much more difficulty. In these latter cases, the testing with individual dusts has been helpful, both in selecting articles for elimination and also in interesting the parents in the whole problem.

Our experience with desensitization to house dust has been too small to allow of any definite conclusions. Several cases have been worse after the first two or three injections and the treatment has then been discontinued. Several have been better, but not to any striking degree. The impression is that these patients do not benefit as much by house dust injections as other asthma patients do with the proper therapy.

Patients who are also skin sensitive to an animal dander have apparently been greatly helped by injections of that allergen. This treatment has seemed preferable to the house dust injections. Although vaccine therapy does not properly come under the heading of specific desensitization, it may not be out of order to mention here that most of our patients received vaccines at some time. In general these injections were evidently beneficial.

Results

In tabulating the results of the entire group we divided the cases into four classes according to their condition during this last year.

1. No symptoms for one year. This meant absolutely no wheezing and no cough to amount to anything.
2. Much improved. These patients may have had two or three slight wheezing spells during the year but have lived normal lives, missed no school on account of asthma, and were for all practical purposes well children.
3. Improved. These children were markedly better, at least 50% improved.
4. Not improved. In this group the improvement, if any, was not striking enough to be considered important.

In the whole group of 101 patients the results were as listed below.

No symptoms for one year	22
Much improved	39
Improved	27
Not improved	13
	101

Adding together the first and second group, we find that 61 of our cases were either entirely relieved or much improved during the last year. An additional 27 were definitely helped and only 13 were not decidedly helped. We realize that it would be much more interesting if we could report after a longer period and hope to be able to do so later on the same cases.

Discussion

Although it is uncertain just what are the substances or the substance in house dust which cause the symptoms in our asthmatic children, it is necessary to have some concept as a working basis. We consider that the active principle of house dust is a mixture of dusts from the skin, hair and feathers of animals, and from the fibres of vegetable materials; and that some of these materials, especially feathers, cotton and kapok become much more allergenic as they degenerate with age.

In skin testing, we have many more positive reactions with our improved materials. In this series of patients, the greater number have had no testing during the last year. Thus our total number of positive tests is small according to our present standards. In table 4, the 5th, 6th and 7th patients were tested recently and show the positive reactions to animal inhalants that we now expect to find.

Our patients were consecutive unselected patients, our treatment often fell far short of the thoroughness desired, and some patients had no effective treatment at all. Our impression is that the injections, both specific and non-specific, were valuable, but that in many cases the preparation of the house was the most important factor.

Conclusions

1. Of 101 unselected cases of asthma in children, forty-five gave positive scratch tests to a stock house dust preparation. Of these fifteen also reacted to their own house dust. Four additional patients reacted to dusts from their own homes but not to stock dust.

2. Patients who react to animal inhalants usually react also to house dust. This fits in with the conception that the animal danders, with other materials such as old kapok and cotton, form the active principle of house dust.

3. It is evident that in most of our severe cases the household dusts are an exciting cause of symptoms. Probably in the milder cases this factor is less obvious but no less important.

4. The proper preparation of the home is an important part of the treatment of most asthmatic children.

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EDITORIAL

At the meeting of November 21, 1935, the Council voted that "all funds accruing to the Rhode Island Medical Society shall be deposited with the Treasurer, and that all disbursements of funds shall be made by the Treasurer after approval by the officer or committee incurring the indebtedness." The effect upon the Rhode Island Medical Journal of this decision was to transfer the financial control from the Publication Committee to the Treasurer.

At the meeting of September 16, 1937, the Managing Editor reported to the Council that he had resigned his appointment, that in his opinion the present arrangement is impracticable, and recommended that one of the following solutions be adopted:—

"1. To discontinue publication of the Transactions of the Society. After an unbroken record of seventy-eight years this does not seem desirable. The Society would face increased lack of interest, the Library would lose the many exchanges and the books which are reviewed.

"2. To arrange with the *New England Journal of Medicine* for publication of the Transactions of the Society.

"3. To return to the Business Manager control of the Journal, financial and other.

"4. To entrust financial and editorial control of the Journal to the Committee on Publication."

In case the last plan should be adopted, the Managing Editor recommended:—

"1. That members of the editorial and business board of the Journal be not eligible for membership on the Committee on Publication.

"2. That the Business Manager make a monthly report on the condition of the Journal to the Publication Committee.

"3. That the Publication Committee submit to the Council an annual report on the financial condition of the Journal.

"4. That the Council appropriate a sum equivalent to the price of one subscription to the Journal for each member of the Rhode Island Medical Society."

At the meeting of January 19, 1939, the Managing Editor reported to the Council that he had sent the following letter to the Publication Committee:—

"My resignation as Editor of the Journal has now been in the hands of the Committee on Publication for considerably over a year. I understand that the reason that it has not been accepted is that the Committee has been unable to find anyone to continue the work. In my opinion the following are contributing causes to this condition:—

"1. The Rhode Island Medical Society refuses to give any financial support to the Journal.

"2. The Society has no provision for secretarial work.

"3. Although the Committee on Publication is elected by the House of Delegates, the Council has transferred the financial control of the Journal from the Committee on Publication to the Treasurer of the Society, an arrangement which makes efficient management of the Journal impossible.

"I am continuing in the position of Managing Editor with the following stipulation:— that at my convenience and without further notification, I shall suspend publication of the Journal. Before the date of suspension a notification will be sent to each name on the mailing list."

REPORT OF THE SOCIAL SECURITY COMMITTEE OF THE RHODE ISLAND MEDICAL SOCIETY.

Introduction

The first official communication that the American Medical Association received from the Interdepartmental Committee to Co-ordinate Health and Welfare Activities of the Federal Government was an address prepared by Miss Josephine Roche, Chairman of the Interdepartmental Committee, and delivered before the House of Delegates of the American Medical Association, at the San Francisco Session, June 14, 1938. This address was delivered at the invitation of the Board of Trustees of the American Medical Association, in the absence of Miss Roche, by Assistant Surgeon General Warren F. Draper of the United States Public Health Service, and himself a member of the House of Delegates.

The Interdepartmental Committee was created in August 1935, following the passage of the Social Security Act, and is composed of the Assistant Secretaries of the Treasury, Interior, Agriculture and Labor Departments, and the Chairman of the Social Security Board.

Technical Committees were set up for co-ordination of Federal and State agencies. The Technical Committee on Medical Care accepted the National Health Survey made by the Public Health Service, which provided an index of disabling illness on the basis of 800,000 familes, including 2,800,000 individuals, and produced a report on "The Need for a National Health Program," which was submitted to the President of the United States.

The National Health Survey was made largely by W.P.A. workers over a period of six months under the supervision of the Public Health Service. The resulting statistics were based on a house-to-house canvass of 740,000 urban, and 36,000 rural families. Much of the reported illness and types of disease had no medical confirmation. The fact that the diagnosis and evaluation of reported disease was made without medical training would in itself make the survey of doubtful value.

At the same time the American Medical Association has been conducting an independent survey, through the co-operation of individual physicians, dentists, hospitals and other groups, under the direction of county medical societies. Although the Survey carried out by the Medical Societies is not completed there is shown to be a marked difference in figures. For example, the census of the American Medical Association shows that only 2,000,000 people in the United States live more than thirty miles from a general hospital, whereas the National Health Survey gives the figure as 17,000,000.

Miss Roche's report states that the existence of grave and far-reaching needs is established and cites impressive figures indicating loss of time due to illness, lack of medical care in obstetrical cases, deaths from tuberculosis and other statistics.

The percentage of illness and lack of medical care is higher in the low income group, and an income of $3,000 or over has been determined as the dividing line between families who can receive adequate medical attention, and those who may be deprived of necessary medical and allied services.

As a result of the work of the Technical Committee on Medical Care, a National Health Conference was called by the Interdepartmental Committee and met in Washington, D. C., July 18-20, 1938.

The Technical Committee summarized its studies of present health and medical services in the United States as follows:

1. Preventive health services for the nation as a whole are grossly insufficient.

2. Hospital and other institutional facilities are inadequate in many communities, especially in rural areas, and financial support for hospital care and professional services is both insufficient and precarious.

3. One-third of the population, including persons with or without income, is receiving inadequate or no medical service.

4. An even larger fraction of the population suffers from burdens created by illness.

To this Conference were invited a carefully selected group of some 150 individuals, most of whom were known because of their so-called liberal views toward medical care, including social and welfare workers, magazine editors, newspaper men and labor union representatives. Conspicuous by their absence were representatives of banking, investment, industry and manufacturing, who might have been interested in the financing of the vast expenditures involved. A small group of physicians representing the American Medical Association were invited. They were quite overwhelmed by the mass of hostile propaganda, and for all practical purposes, might better have stayed at home.

There was much emotional well wishing, and much confusion by the laity of the indigent with the low income groups. The physician was made to feel as a guilty conspirator to block justice and progress, — a selfish, narrow-minded individual having no ability to manage affairs of health.

The Committee submitted a program of five recommendations to meet the problems of health and medical services which will be discussed in detail a bit later.

Following the National Health Conference, a special session of the House of Delegates of the American Medical Association was called to meet in Chicago, September 16-17, 1938, to consider the national health program as submitted at the above Conference.

Report of the Rhode Island Committee

The following is the report of the Social Security Committee of the Rhode Island Medical Society, appointed by the President to consider the proposals of the National Health Conference. These proposals are as follows:

Recommendation I

Expansion of the Public Health Service

1. We agree with the Reference Committee of the House of Delegates of the American Medical Association in recommending the establishment of a Federal Department of Health with a secretary who shall be a doctor of medicine and a member of the President's cabinet.

2. The general principles outlined by the Technical Committee for the expansion of Public Health and Maternal and Child Health services are approved. The Rhode Island Medical Society definitely seeks to co-operate in developing efficient and economical ways and means of putting into effect this recommendation.

3. Any expenditures made for the expansion of public health and maternal and child health services should not include the treatment of disease except so far as this cannot be successfully accomplished through the private practitioner.

Recommendation II

Expansion of Hospital Facilities

Your Committee favors the expansion of general hospital facilities where such need exists. The hospital situation in Rhode Island would seem to indicate that there is need for providing some arrangement by which the indigent of the smaller towns can use the existing hospitals in the State. If this is done we are of the opinion that existing facilities will be sufficient. Your Committee heartily approves the recommendation of the Technical Committee stressing the use of hospital facilities. The stability and efficiency of many existing church and voluntary hospitals could be assured by the payment to them of the cost of the necessary hospitalization of the medically indigent.

More research facilities are needed for mental cases which now occupy 50% of the hospital beds of the country.

Government statistics do not take into account the factor of medical progress which is constantly cutting down the period of hospitalization.

Recommendation III

Medical Care for the Medically Needy

Your Committee advocates recognition of the principle that the complete medical care of the indigent is a responsibility of the community and of the medical and allied professions, and that such care should be organized by local governmental units and supported by tax funds.

Since the indigent now constitute a large group in the population your Committee recognizes that the necessity for State aid for medical care may arise in poorer communities and the Federal government may need to provide funds when the State is unable to meet these emergencies.

Reports of the Bureau of the Census, of the U. S. Public Health Service and of life insurance companies show that great progress has been made in the United States in the reduction of morbidity and mortality among all classes of people. This reflects the good quality of medical care now provided. Your Committee wishes to see continued and improved the methods and practices which have brought us to this present high plane.

Your Committee wishes to see established well co-ordinated programs in the various states in the nation, for improvement of food, housing and the other environmental conditions which have the greatest influence on the health of our citizens. Your Committee wishes also to see established a definite and far-reaching public health program for the education and information of all the people in order that they may take advantage of the present medical service available in this country.

We believe that in Rhode Island at any rate the interests of the public will best be served by a mini-

mum amount of home and office care of the medically indigent, and generous contributions from tax funds for medical care at the hospitals. We believe that the medically indigent can best be cared for when hospital facilities are available when needed, as the private pracitioner cannot be expected to bear the burden of carrying out expensive technical procedures.

In the face of the vanishing support of philanthropy, the medical profession as a whole will welcome the appropriation of funds to provide medical care for the medically needy, provided, first, that the public welfare administrative procedures are simplified and co-ordinated; and, second, that the provision of medical services is arranged by responsible local public officials in co-operation with the local medical profession and its allied groups.

Your Committee feels that in Rhode Island a system should be developed to meet the recommendation of the National Health Conference in conformity with its suggestion that "The role of the Federal government should be principally that of giving financial and technical aid to the states in their development of sound programs through procedures largely of their own choice."

A medically indigent person has been defined as one who is unable in his home through his own resources to provide medical, dental, nursing and hospital services and pharmaceutical needs without depriving himself of food, clothing and shelter as determined by the local health officer.

Recommendation IV

A General Program of Medical Care

We do not at present give any discussion about medical care for the whole people except to state that we agree with the Reference Committee in being unwilling to support any system of State care for the bulk of the population, or any system of compulsory health insurance.

Recommendation V

Insurance Against Loss of Wages During Sickness

This Committee approves of the report of the Reference Committee which reads as follows:

"Under Recommendation V on Insurance Against Loss of Wages During Sickness: In essence, the recommendation deals with compensation of loss of wages during sickness. Your Committee unreservedly endorses this principle, as it has distinct influence toward recovery and tends to reduce permanent disability. It is, however, in the interest of good medical care that the attending physician be relieved of the duty of certification of illness and of recovery, which function should be performed by a qualified medical employee of the disbursing agency."

As has been mentioned in this report we recommend that the Rhode Island Medical Society adopt the policy favoring administration of plans for medical care by local communities and by states with a minimum of Federal control.

Your Committee feels that any plans for medical care in Rhode Island should be made with the active co-operation and approval of the Rhode Island Medical Society.

Your Committee further recommends:

1. That if accepted this report be printed or mimeographed and mailed to every doctor in the State.

2. That plans be made for discussion of this subject in the District Medical Societies.

The above report is unanimously adopted by the Committee.

Respectfully submitted,

Alex M. Burgess, Providence
William P. Buffum, Providence
Ralph Di Leone, Providence
John F. Kenney, Pawtucket
Guyon G. Dupre, Woonsocket
John W. Helfrich, Westerly
Samuel Adelson, Newport
George L. Young, East Greenwich
Roland Hammond, Providence,
Chairman.

Comment

The Committee of seven appointed at the special session of the House of Delegates held on September 17th to meet with Federal representatives relative to the proposed national health program, assembled in Washington October 31, 1938.

The action of the House of Delegates was fully discussed before the two Committees, and the discussion was confined largely to principles involved.

Recommendation I on Expansion of Public Health Service elicited but little discussion. There was no opposition to the position taken by the Medical Committee that the treatment of disease should not be included in this category except where it cannot be carried out by the general practitioner.

Recommendation II on Expansion of Hospital Facilities brought out the discrepancies between the statistics assembled by the Technical Committee and those gathered by the American Medical Asso-

ciation. No final solution was reached but it was agreed by all that standards compatible with good service, both hospital and professional, should be maintained, and that these would vary with location, character and size of service to be rendered. It was agreed by all that existing hospitals should be utilized, and that additional hospitals should be built solely on a basis of need. The suggestion of 4.5 hospital beds per thousand of population as representing a ratio of hospital needs was not accepted by the Medical Committee.

Diagnostic Centres are planned for rural communities to cost $30,000 each, and to include provision for treatment as well.

Under Recommendation III on Medical Care for the Medically Needy, the Medical Committee called attention to the many plans that are being tried out by the component units of the American Medical Association. The Technical Committee regards the health departments as the central agency around which such plans should be developed. It was pointed out that under the present system of practice needy patients do not avail themselves of services offered, and that further provision of services should be arranged by responsible local public officials in co-operation with the local medical profession and its allied groups.

Recommendation IV on a General Program of Medical Care brought out the controversial principles between the two Committees, regarding sickness insurance. The Medical Committee favored the voluntary and the Technical Committee the compulsory type.

Comparing this form of insurance to that already prevailing under Workmen's Compensation Acts, the question was propounded as to whether there is a difference between acceptance by doctors of pay for service from compensation boards, and acceptance of pay by them from a governmental, tax supported agency with free choice of physician allowed. The discussion resulted in a deadlock.

Recommendation V on Insurance Against Loss of Wages during sickness occasioned little or no discussion.

The Interdepartmental Committee is to call conferences with representatives of the American Public Health, Dental, Hospital and Nursing Associations, and following these conferences, another meeting with the Committee from the American Medical Association was suggested in the hope that differences in viewpoint might be ironed out before the final report of the Interdepartmental Committee is submitted to the President, and later to Congress when its recommendations may be embodied in proposed legislation.

PROVIDENCE MEDICAL ASSOCIATION

Minutes of the February Meeting

The regular meeting of the Providence Medical Association was called to order by the President, Dr. Harry C. Messinger, on Monday, February 6, 1939, at 8:35 P. M. The minutes of the last meeting were read and approved. The Secretary reported for the Standing Committee as follows:

1. That a motion had been passed that the Standing Committee recommend that the President be empowered to appoint a Committee to study Voluntary Health Insurance and allied matters.

2. That a motion was passed that a Committee be appointed to study the various phases of telephone service as used by the membership and that the Executive Secretary be made a member of that Committee.

3. That a motion was passed that the President be empowered to appoint a Committee to study Group Health and Accident Insurance for Physicians.

The report of the Standing Committee was accepted.

Dr. Philip Batchelder presented the report of the Committee on Tuberculosis and Silicosis, stating prior to the reading of same that it was not a final report but rather a preliminary survey with recommendations deemed advisable at this time. Dr. C. S. Westcott moved that the report be accepted. The motion was seconded and passed. Dr. Langdon moved that the Recommendations made in the report be adopted. The Motion was seconded and passed.

The President reported that the Committee of Dr. Michael Milan and Dr. Thomas Grzebien had filed with the Secretary a prepared obituary and tribute to Dr. Richard Boucher which was available to any member of the Association for reading.

The name of Doctor Himon Miller was submitted for election to membership. Dr. Muncy moved that Doctor Miller be elected. Motion was seconded and passed unanimously.

President Messinger announced the appointment of the following Committee Appointments: To prepare an obituary of Dr. George Crooker: Dr. John M. Peters and Dr. Bertram Buxton. To prepare an obituary of Dr. Edward Pierce: Dr. Jesse Mowry and Dr. John E. Donley. Committee to Study Group Health and Accident Insurance for Physicians: Dr. Robert G. Murphy, (Chairman),

Dr. Emanuel W. Benjamin, Dr. James H. Cox. Committee to Study Telephone Service as Provided: Dr. John G. Walsh, (Chairman), Dr. James H. Fagan, Dr. Walter S. Jones, Dr. Nathan S. Rakatansky, Mr. John E. Farrell. To fill a vacancy on the Legislative Committee caused by the resignation of Dr. Roland Hammond: Dr. E. V. Conrad.

Dr. William Muncy moved that the President be empowered to appoint a Committee to study the Problem of Voluntary Health Insurance and Allied Matters. The motion was seconded and passed. President Messinger announced the appointment of Dr. Alex M. Burgess as Chairman for this Committee on Voluntary Health Insurance and stated that the complete list of appointments to the Committee would be announced at a subsequent date. The President reported that information regarding railroad and hotel expenses for members planning to attend the Convention of the College of Physicians in New Orleans March 27-31 would be available through the office of the Executive Secretary.

The business meeting being concluded, the President introduced as the first guest speaker of the evening Mr. Joseph Broderick, Collector of Internal Revenue for the Providence District. Mr. Broderick spoke briefly regarding the Income Tax regulations as applied to physicians, and then introduced Mr. John O'Connell, Chief of the Income Tax Division, who outlined the main points to be considered in filing of tax returns by physicians and then answered questions proposed by members.

Doctor Gordon M. Morrison of Boston, next presented for discussion the topic "Therapeutic Applications of Occupational Therapy," illustrating his talk by means of a motion picture illustrating rehabilitation work among those handicapped. Discussion was opened by Dr. Burton, who was followed by Dr. Fitzpatrick, Dr. Stone, and Dr. Horan. Dr. Morrison closed the discussion and introduced Miss Blodgett, who is engaged in Occupational Therapy at Faulkner Hospital in Boston.

Dr. Russell S. Bray concluded the scientific program with a splendid discussion of "Gastroscopy and Clinical Medicine," showing some unusual colored plates to illustrate his topic. Dr. S. Morein and Dr. Elihu Wing discussed the presentation of the topic.

The meeting was adjourned at 11 P. M. Attendance 175. Collation was served.

Respectfully submitted,

HERMAN A. LAWSON, M.D., *Secretary.*

Report of the Committee on Tuberculosis and Silicosis

In presenting this report of the Committee on Tuberculosis and Silicosis to the Providence Medical Association we wish to stress that our recommendations concern only our Association and our local problems. Many of the factors in the successful handling of tuberculosis are, of necessity, statewide in scope, and it might be profitable for a committee from the State Medical Society to investigate some of the larger aspects of the situation. Until such time, there are several local phases which we feel could be improved, and, when and if the State Society sees fit to act, our program could be easily modified to meet new conditions.

As it is through the practicing physician that most of the new cases of tuberculosis are found it is essential at the onset that his interest and cooperation be secured. All physicians know the seriousness of tuberculosis and of course are interested in anything which would decrease or eradicate the disease. To enliven this more or less passive interest into an active individual effort would very certainly show results. The definite increase in interest which was shown following the recent talk before the Association by Dr. David R. Lyman points to one way in which knowledge and interest may be increased. Occasional speakers who could inform the Association of the more recent advances in the diagnosis and treatment of tuberculosis would increase the zeal for attacking the problem.

The Rhode Island Tuberculosis Association has much information material available for both physicians and the public and would be only too happy to assist in its distribution. Small pamphlets or mimeographed messages sent out with the monthly meeting notices would help keep up the good work between the stimulations of formal addresses before the Association.

It is felt that closer relations between our state sanatorium and the profession would be of distinct benefit, although that is more of a state problem. It is many years since a meeting of the medical society has been held at Wallum Lake. Many physicians do not know at first hand of the facilities available for treatment of their patients. Other desirable details such as follow-up letters from the sanatorium reporting progress at regular intervals, in addition to the present notification on admission and discharge, could be worked out.

Mr. Willis E. Chandler, Executive Secretary of the Rhode Island Tuberculosis Association, has offered his services and those of his organization for any lay or professional program of publicity and education which the Association approves. He has assured us that he would much prefer to have the initiative come from the medical society and that once it is secured he and his association have large amounts of suitable literature which could be distributed under the direction of our Association. He also can obtain the services of a publicity manager for an occasional intensive campaign if that is desired. Such a publicity director could correlate the activity of the different agencies interested in tuberculosis, by getting their publicity into the newspapers and over the radio. A first class man working in this way would do much to make the city conscious of the problem and of the available means and methods for the control of tuberculosis.

We believe that publicity sharply pointed at the critical parts of the program is much more valuable than general publicity on the dangers and prevalence of tuberculosis. In fact, it is the opinion of some that the fear side of the education program has already been stressed too much in the past. Especial emphasis should be laid on the importance of the examination of all contacts and of the age group of 15 to 25 years, and the fact that no examination of the chest is really complete without a properly executed chest X-ray study.

Your Committee takes the stand of recommending X-ray examinations of the chest of contact cases and others, including a tuberculin test where desired. We feel that an X-ray examination in adults is of great importance, since the physical examination may not show abnormal findings in an early case. The objection of expense may be raised, but of what advantage is it to save a few hundred dollars on negative chest examinations only to miss an early case which, when late, will cost several thousands of dollars to cure.

One should not imply from the foregoing that we disapprove of the tuberculin test, but merely that the apparent obvious economy may really be uneconomical. The facts derived from an X-ray examination of the chest are more definite. From the point of view of the educational program, it would appear to be much simpler to advise a single procedure. We believe that our suggestion is the best for this particular purpose, but we can imagine situations in which a tuberculin test would be desirable.

The whole aim of the program is to discover the incipient or early case, thus saving the patient time and suffering, and money for the patient and the State. Those patients without funds would have to be examined by some public agency, those who could afford to pay would go to a private roentgenologist. All of the roentgenologists of Providence have agreed to charge a minimum fee, when necessary, in such cases. An incidental but none the less valuable feature of the chest X-ray examination would be the discovery of non-tuberculous lung conditions and some cases of heart disease which otherwise might pass unnoticed.

In view of the fact that it is recognized that the age group of 15-25 years furnishes the greatest number of new and early cases of tuberculosis, we advocate an effort to have examined and X-rayed as many of this group as possible. It is in this period of from 15-25 years that most individuals start gainful employment. If a plan could be adopted which would provide for a physical examination and X-ray of the chest before employment of all persons under 30 years of age, we feel sure that many early cases would be discovered.

We therefore advocate a plan by which every influence is exerted to bring about such examination at the time of first employment in industry, city, state and federal departments, schools, and restaurant and domestic services. Students of colleges and professional and trade schools should also be included. In those industries where silicosis is a potential hazard, chest X-ray examinations should be made before employment at any age.

For the early discovery of tuberculosis, at least three distinct methods of approach would have to be used to induce the individuals in the different fields to have these examinations made. In all there would have to be an extensive educational program.

Nursemaids and other domestic help could be certified by the medical association as being free from disease after having passed a standard physical examination including laboratory tests and chest X-ray examination. Employment services and employers could be taught the value of the certification. The employees would gradually see the advantages in gaining and holding employment.

A similar procedure would hold for food handlers, and in addition, when all its employees had been thus examined and passed, a special certificate could be given by the medical association to the restaurant for public display.

In the case of governmental employees, the group comprising school teachers is particularly important, as they come in close daily contact with young children. The Providence school department has already made a ruling that all teachers must be examined before starting work. We hope that their excellent example will be followed by other departments.

For general industry still other arguments would have to be used. Many employers are already somewhat public health-minded. Further effort would not have to be great to convince them of the desirability of hiring physically sound workers at the start. Another line of approach would be from the point of view of protection of the fellow workers.

An annual X-ray examination for domestic servants, food handlers, and school teachers would be very desirable, but it would probably be well to postpone consideration of this feature until the results of the initial examinations had been collected and studied.

Because of the extended time necessary for the care of the tuberculous, much of the expense of diagnosis, treatment, and rehabilitation has to be borne by public funds. Of these three factors in the control of this disease, that of diagnosis is the least involved with governmental control. It is partly for this reason that it was decided to largely limit our suggestions to the first factor.

While the Providence City Health Department has been limited by lack of funds and other matters in doing much along the lines of treatment, rehabilitation, and study, it is understood that plans are under way to have the department take a more active part in the program. For example, if the proposed amendment to the law regarding the reporting of tuberculosis is passed, the City Health department can be of considerable help to the practicing physicians in identifying and following up contacts. They also hope to have the services of public health nurses who will aid in the epidemiological investigation of the disease and gather data for study.

As mentioned above, there are many of the larger aspects of the problem of tuberculosis which have not been touched, partly because they involve statewide changes and partly because we believe effort should be confined, for the present at least, to more restricted and specific problems, i.e., (1) the chest X-ray examination of contacts, and (2) the examination of workers at the time of first employment.

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We make the following recommendations and urge their adoption:

1. That the effort be made to have at least one paper a year read by a guest speaker before the Association on the subject of tuberculosis.
2. That the aid of interested agencies be secured to assist us in arousing further interest among the profession, and in carrying out a lay program of education.
3. That the main theme of the publicity be the examination of individuals *under thirty* years of age and of all contacts.
4. That the Association approve the policy of routine chest X-ray examinations for the above groups.
5. That the Association set up a medical certification committee, similar to the Milk Commission, which would work out the details of certification of certain groups as mentioned in the body of this report.

Respectfully submitted,

Philip Batchelder, M.D., *Chairman*
William P. Buffum, M.D.
Francis H. Chafee, M.D.
Joseph Smith, M.D.
Ubaldo E. Zambarano, M.D.

Rhode Island Hospital

Dr. Ernest Gaillard, Jr., of Louisville, Kentucky, after spending one month at the Lying-In Hospital as an intern, started a two years' internship at Rhode Island Hospital on January 15th, 1939. Dr. Gaillard is a graduate of University of Kentucky and University of Louisville Medical School.

On February 1st, Dr. Lee Sannella began a year's internship at the Eye and Ear Hospital in Newark, N. J. Dr. Sannella also expects to attend lectures and classes at the New York Eye and Ear Hospital.

On February 15th, Dr. Charles B. Ceppi of Syracuse, N. Y., a graduate of Princeton College, and Syracuse Medical School, began a two years' internship at the Rhode Island Hospital. Dr. Ceppi did substitute intern work at Syracuse Memorial Hospital for eight weeks, St. Joseph's Hospital, six weeks, Syracuse General Hospital, three months and Providence Lying-In for one month.

On January 25th, Dr. Lawrence Minish completed his internship at the Rhode Island Hospital.

OBITUARY

JOHN FRANCIS McCUSKER, M.D.

Dr. John Francis McCusker died of cerebral hemorrhage on August 27, 1938. He was born in Providence, the son of Thomas and of Honor (Keough) McCusker, on November 19, 1865. He was graduated from the English department of the Providence High School in 1883. He then entered Manhattan College, New York, from which he received the degree of B.S. and at the same time the gold medal for mathematics. From Manhattan he received the degree of M.S. in 1892, and LL.D., *honoris causa*, in 1922. Deciding to become a physician, he entered the College of Physicians and Surgeons of Columbia University and obtained his M.D. in 1889.

From 1889-90 he was house officer at the Rhode Island Hospital and externe surgeon 1890-94. He was a member of the staffs of the Providence Lying-In Hospital, 1892; the Metropolitan Eye, Ear, Nose and Throat Hospital, New York, 1895; The Massachusetts Eye and Ear Infirmary, 1896-97. From 1891 to 1894 he was attending physician to St. Joseph's Hospital and for a time served as Secretary of the St. Joseph's Hospital Staff Association. He was a member of the consulting staff of the Charles V. Chapin Hospital and of the courtesy staff of the Rhode Island Hospital and for some years was attending physician, United States Public Health Service.

On September 21, 1908, Doctor McCusker married Miss Mary Florence Rafter of Damariscotta, Maine, who predeceased him.

He was a member of the Providence Medical Association, the Rhode Island Medical Society, the Alumni Association, the Massachusetts Eye and Ear Infirmary, and the American College of Surgeons. For twenty-five years he was a member of the Providence Lodge, No. 14, the Benevolent and Protective Order of Elks.

Although in the early years of his medical career, Dr. McCusker was engaged in the practice of general medicine, he attained his greatest distinction as one of our best-known specialists in diseases of the eye, ear, nose and throat. For more than forty years he was busy in the practice of his specialty. He was revered by his patients and his colleagues as one whose technical skill was as great as his knowledge was comprehensive. Naturally a pleasant companion, he spiced his conversation with many a sally of wit and humor. He was a great lover of books; his reading was omnivorous. He was, in truth, a splendid example of the humanist physician whose reticence too frequently conceals the stores of his learning. While reading he was accustomed to write critical notes upon the margins of the pages. Those who read his notes found them often times more interesting than the text. Through a long life he made many friends who cherish his memory as a sincere physician and a real scholar in medicine.

He is survived by his daughter, Miss Honor McCusker, a member of the staff of the Boston Public Library in the department of rare books.

JOHN P. COONEY, M.D.
JOHN E. DONLEY, M.D.

RECENT BOOKS

SURGICAL TREATMENT OF HAND AND FOREARM INFECTIONS. By A. C. J. Brickel, M.D. pp. 300, With 166 Text Illustrations and 35 Plates, Including 10 in Color. Cloth, $7.50, The C. V. Mosby Company, St. Louis, 1939.

In the first 100 pages of this excellent work there is a description of the anatomical structure of the hand and forearm, based on original dissections and illustrated with plates of which many are in color. The synovial sheaths and bursæ are demonstrated by x-ray plates made after the injection of radiopaque material by an original method. After a discussion of general principles the special surgery of infections of the hand and forearm is exhaustively treated. Finally the influence of specific infections and of general diseases is considered. The author, the artists, and the printers have collaborated to make this book a worthy successor to Kanavel's monumental work on the subject

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CLINICAL LABORATORY METHODS AND DIAGNOSIS. By R. B. H. Gradwohl, M.D. Second edition. Price $12.50. Pp. 1500, with 492 illustrations and 44 color plates. St. Louis; The C. V. Mosby Co., 1938.

This comprehensive work on clinical laboratory procedures is a valuable reference for the professional laboratory man, and parts of the work are of value to the clinician. The chapters on Parasitology and Toxicology are particularly valuable to the practitioner who has only occasional need for such reference. Although the technical procedures included in the chapters on blood chemistry do not include the most recent determinations and do not sufficiently cover the clinical application for these determinations, the book is one that fills a gap in the practitioner's library. Technically, the book is unusually good and will stand hard usage. Illustrations in color and in black and white are of good quality and are well chosen.

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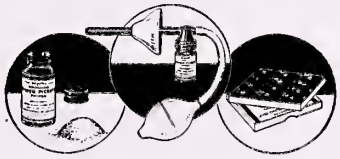
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SOLOMON, P.; MITCHELL, R. S. AND PRINZMETAL, M.: The Use of Benzedrine Sulfate in Postencephalitic Parkinson's Disease —*J. A. M. A.*, 108:1765, May 22, 1937.

FINKELMAN, I. AND SHAPIRO, L. B.: Benzedrine Sulfate and Atropine in Treatment of Chronic Encephalitis— *J. A. M. A.*, 109:344, July 31, 1937.

DAVIS, P. L. AND STEWART, W. B.: The Use of Benzedrine Sulfate in Postencephalitic Parkinsonism, *J. A. M. A.*, 110:1890, June 4, 1938.

MATTHEWS, ROBERT A.: Symptomatic Treatment of Chronic Encephalitis with Benzedrine Sulphate—*Am. J. Med. Sci.*, 195:448, April, 1938.

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Vital Statistics	
Deaths all	283
Deaths under 1	25
Deaths over 70	93
Births	463
Marriages	103
Infant Mortality	54
Death Rate	13.71
Birth Rate	22.43
Principal Causes	
1. Heart Disease	90
2. Cancer	39
3. Pneumonia	23
4. Nephritis	20
5. Cerebral Hemorrhage	18
6. Auto Accidents	3

Communicable Diseases	*Cases*	**Deaths**
Diphtheria	0	0
Scarlet Fever	31	0
Measles	33	0
Whooping Cough	235	4
Pulmonary Tuberculosis	0	5
Typhoid and Paratyphoid Fever	0	0
Poliomyelitis	0	0
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AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY

The American Congress on Obstetrics and Gynecology, sponsored by the American Committee in Maternal Welfare, Inc., will be held in Cleveland on September 11-15, 1939. Tentative programs and any further information desired may be obtained from the Central Office, 650 Rush Street, Chicago.

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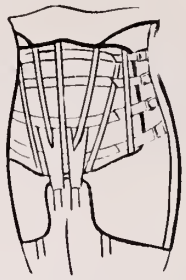
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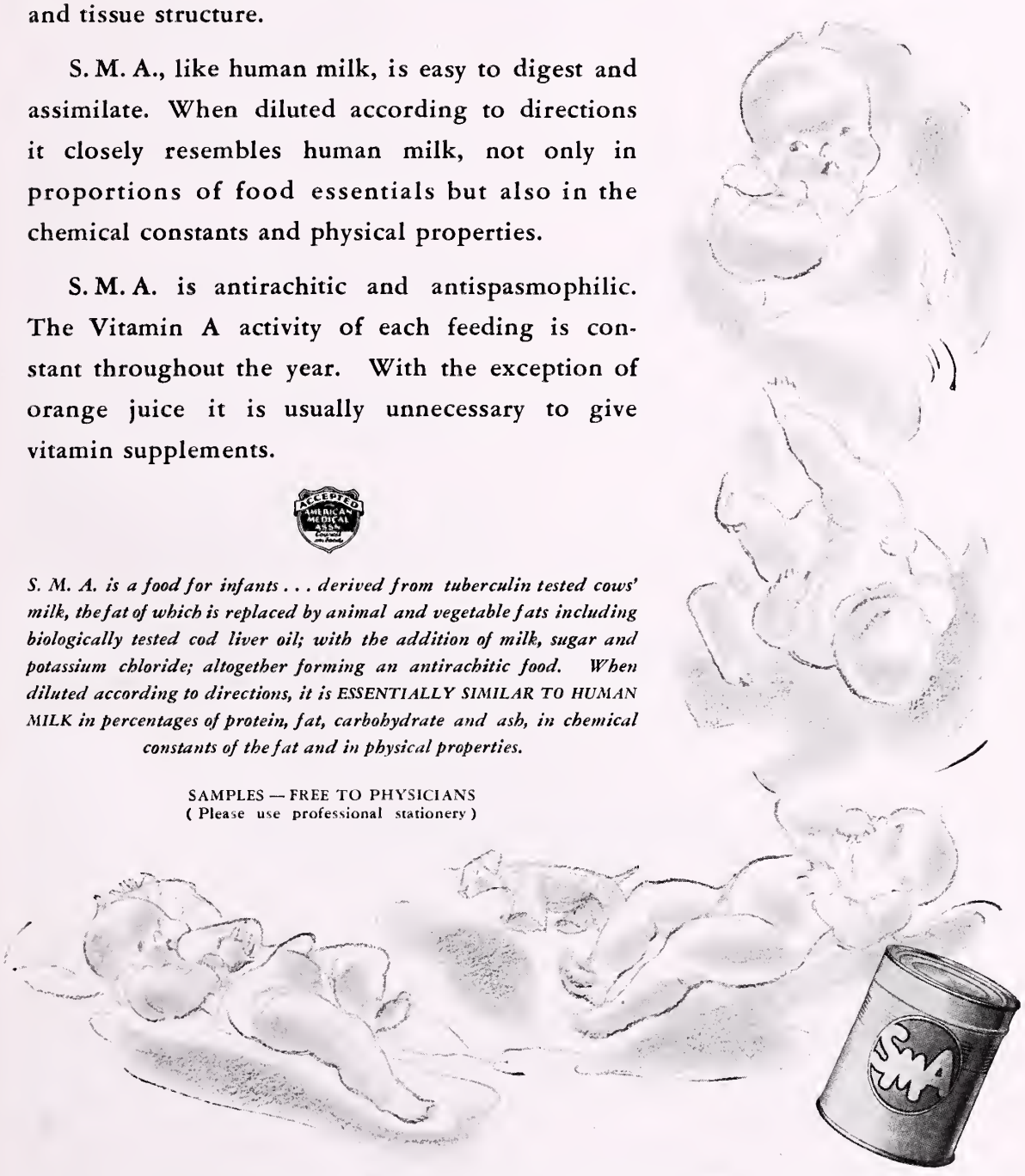
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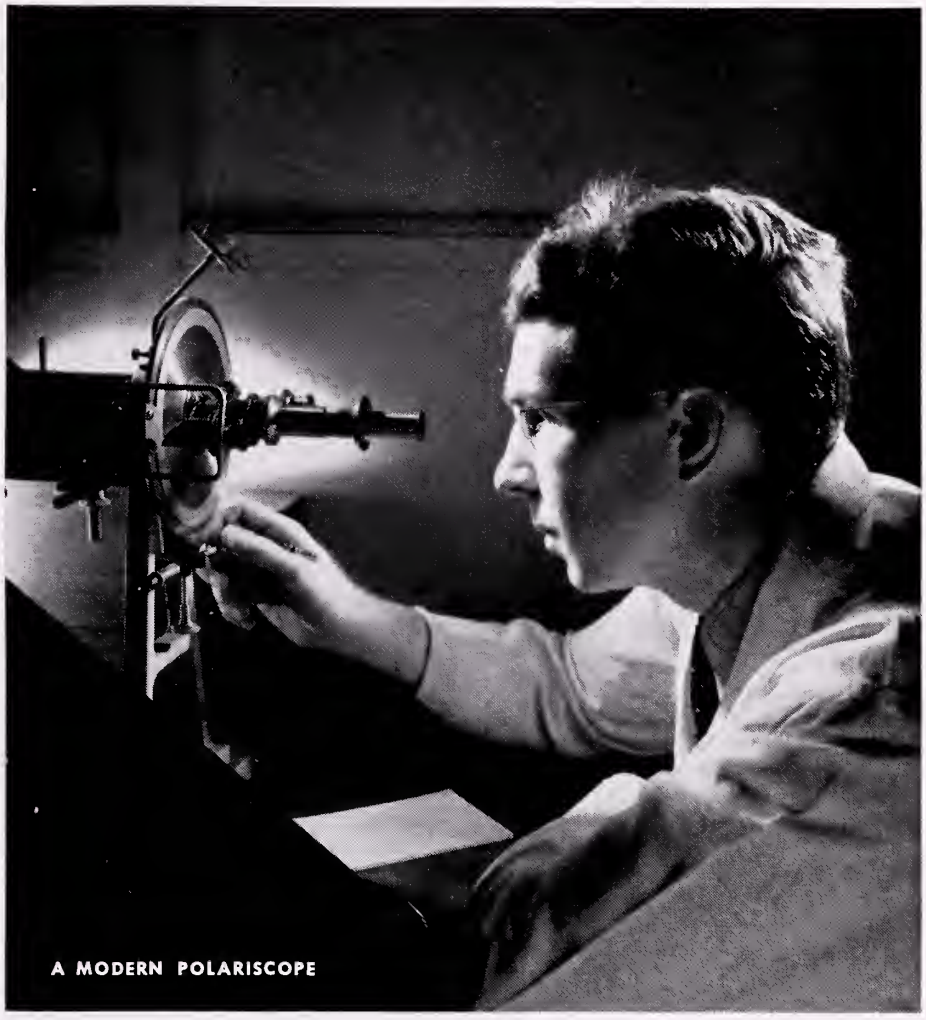
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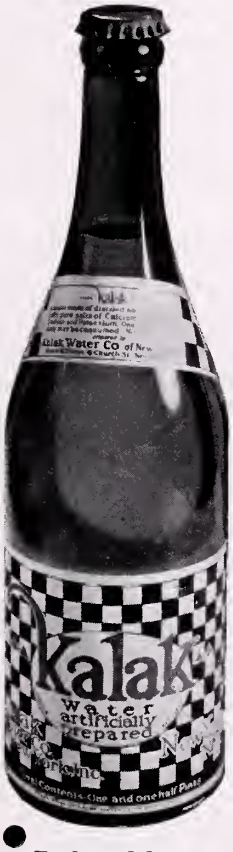
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> "More stress has been placed upon the various milks and their properties than on infants and their tolerance. Nutritional research has advanced sufficiently to adapt effectively the required type of milk to the individual infant rather than the infant to the milk."

Thus has been aptly expressed the trend in modern pediatrics towards the use of "individualized" rather than standardized formulas.

Because of many desirable properties such as its uniformity in composition and its physical properties after homogenization and heating—as well as its ready availability and economy—canned evaporated milk has been successfully used for many years in infant feeding. The value of such milk in some instances where individualized feeding is required has also been clearly indicated(1).

There appears to be no uniform agreement among pediatricians as to the exact time of life when other foods should be added to the milk diet. Nevertheless, it is agreed that early but judicious addition of properly prepared soups, cereals, fruits and vegetables is extremely desirable to increase mineral and vitamin intake and to improve gastrointestinal motility. The psychological value of the early addition of a variety of foods in the formation of proper dietary habits in later childhood is also recognized.

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(1) 1937. Am. J. Digestive Diseases, Nutr. 4, 240.
(2)a. 1933 J. Am. Diet. Assn. 9, 295.
b. 1934. J. Nutrition 8, 449.
c 1936. Ibid. 12, 405.
d. 1936. J. Am. Diet. Assn. 12, 231.
(3) 1932. J. Pediatrics 1, 749.
(4) 1938. Am. J. Diseases Children 55, 1158.

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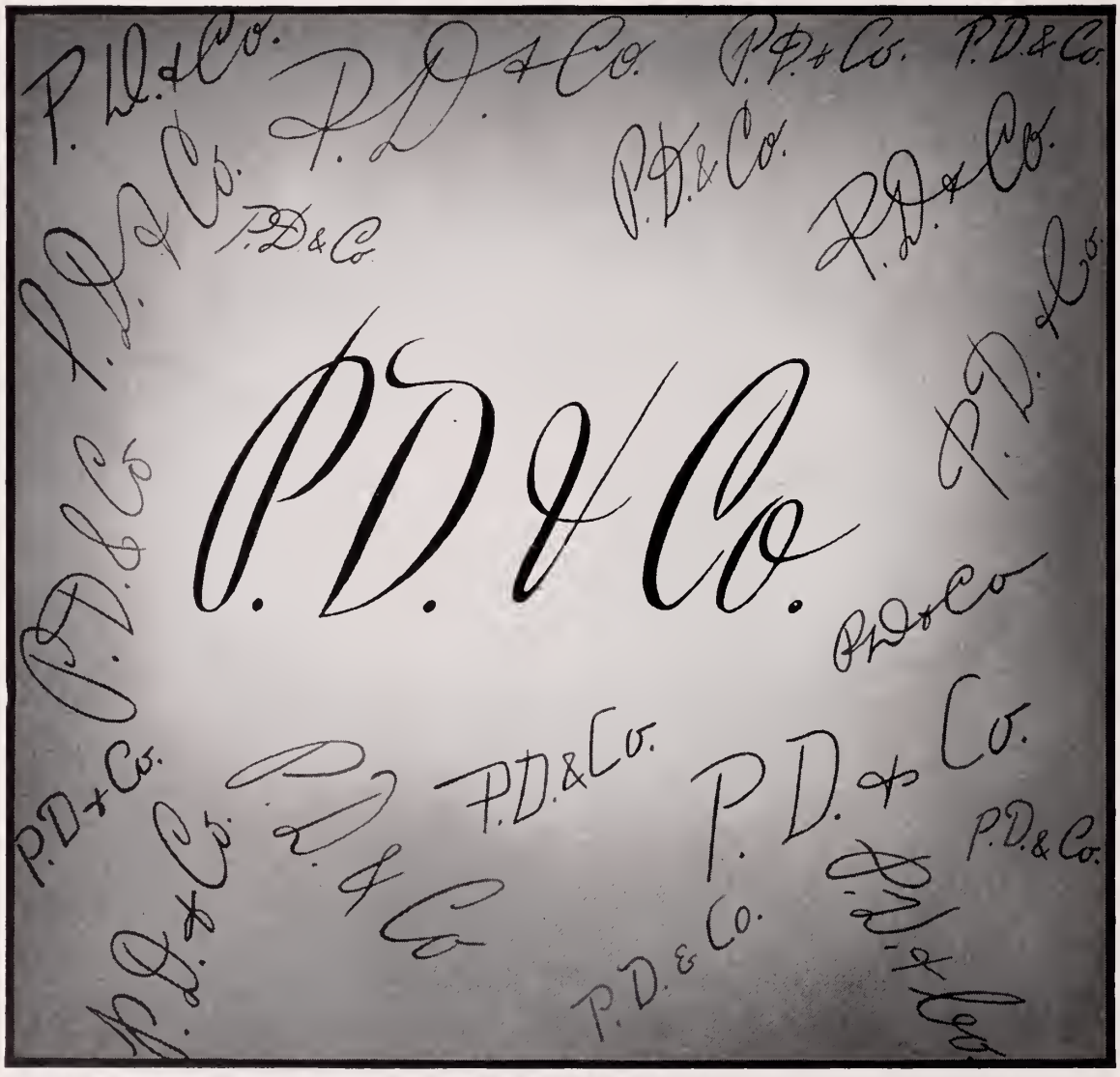
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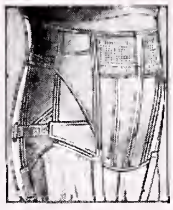


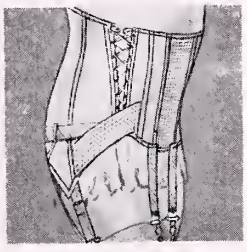


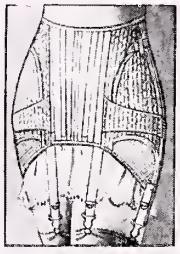
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THE RHODE ISLAND MEDICAL JOURNAL

Volume XXII APRIL, 1939 Number 4

AN OPERATION FOR SPINA BIFIDA FORTY YEARS AGO

WALTER LEE MUNRO, M.D.
413 LLOYD AVENUE, PROVIDENCE, RHODE ISLAND

"Tempora mutantur et nos in illis mutamur"

The modern surgeon naturally prefers to operate in his own hospital, where conditions are as nearly aseptic as possible; with his own assistants and specially trained nurses, so as to ensure good teamwork; and with all the facilities of the institution at his command. He may, and frequently does, refuse to operate under other conditions.

The following case, somewhat belatedly reported after the lapse of forty years, exemplifies a type of practice universally in vogue only a few decades ago and still necessary in rural districts and outlying communities with no hospital facilities.



FIGURE 1. *Dr. Munro's case of Spina Bifida. Before operation.*

Josephine N.—a female infant seven weeks old, was brought to me in consultation by Dr. M. P. Mahoney. The infant, born February 7, 1899, at East Webster, Mass., was strong, well-nourished, happy, free from any blemish or imperfection except for a large tumor in the region of the second and third lumbar vertebrae. There were no signs of hydrocephalus, no protrusion of the fontanelles.

The tumor was about three-quarters as large as the child's head; its surface, smooth and unbroken, was covered by healthy skin over the lower portions but was thin, shiny, parchment-like, semi-transparent towards the vertex. It was diagnosed as a Spina Bifida and the child referred to the Rhode Island Hospital for operation. For some reason she was "discharged untreated" April 8th, 1899.

Three days later Dr. Mahoney again came to my office, told me of the child's abortive visit to the hospital and asked if I would operate. He was told to send the infant into the hospital on my service, but said that the mother, in view of the child's unsuccessful visit, was unwilling to take it there again and wanted the operation done at home. It was so arranged.

The operation was performed April 12th, 1899 in the kitchen of a two-story tenement-house in East Providence. The room was neat and clean but there could be no approach to asepsis. The operation was performed upon an ironing-board between two tables. The instruments were boiled and immersed in alcohol; the cotton and sponges were baked in the kitchen-oven. An antiseptic solution was used throughout.

Dr. Mahoney was my only assistant. Ether was administered by Dr. Albert H. Miller, then an interne at Rhode Island Hospital.

A shallow longitudinal incision was made over the circumference of the tumor and the outer tegumentary coat and the dura carefully dissected separately and reflected back, and the delicate, transparent arachnoid, its inner surface covered with nerve filaments, was exposed. A clear fluid was evacuated from the sac, the arachnoid tucked as gently as possible into the defect in the spinal column and covered in by the dura which was held in place by buried sutures. The redundant flaps were now trimmed to size and the external wound

closed by interrupted sutures and dressed with sterilized gauze and cotton.

Recovery was without incident. The picture showing the result was taken eight days after.



FIGURE 2. *Dr. Munro's case of Spina Bifida. Photograph taken eight days after operation.*

The child was bright and highly intelligent. When she was about twelve years old her mother reported that she was the strongest and most robust of her seven children. Except for the measles she was never sick. At seventeen she came to my office with her mother and asked help in securing admission to a training school for nurses. Being told that she was a little too young for that, she entered a business college and became an expert stenographer. At twenty-one she married one of her office associates and later bore him two children. All of these details are cited to show the complete absence of any of the distressing complications which so often attend Spina Bifida.

Josephine died of pneumonia December 6th, 1929 in her thirty-first year, after an illness of thirteen days.

The operation was a simple one; its complete success was due to the fact that no attempt was made to remove the sac of the meningocele. The arachnoid with the net-work of nerve-filaments and rootlets on its inner surface was preserved intact and practically uninjured, thus obviating the dangers of paralysis and loss of function of the lower limbs and various sphincters, as well as materially lessening the perils of the normally high death-rate attending such operations. There were no signs, either before or after the operation, of hydrocephalus or other intracranial complications.

As to the conditions under which the operation was performed: they were the usual thing sixty or more years ago when every operation was practically an emergency operation, and every surgeon, however eminent, was at the same time a general practitioner.

THE PEDIATRIC SIGNIFICANCE OF MALOCCLUSION

RICHARD M. SMITH, M.D.*
66 COMMONWEALTH AVENUE, BOSTON, MASSACHUSETTS

Malocclusion of the teeth is a subject with many ramifications reaching beyond the field of dentistry. The three papers this afternoon indicate the threefold character of the problem and the necessity of co-operation between the dentist, the otolaryngologist and the physician for its solution. The physician holds the strategic position because he is the one who sees the child early in life and is able to exert some influence in the prevention of malformation of the jaws, as well as to discover the necessity for treatment. Fortunately for the child, the practice of periodic examination throughout the period of growth and development is becoming more widely popular. These regular visits to the physician's office provide opportunity for a complete examination of the child, for the supervision of his diet and for guidance in the formation of healthy habits. It is by these means that we may assist in the prevention of malocclusion and contribute to its treatment.

Examination of the teeth is a part of the physical examination of the child. It is not enough to look for caries or evidences of infection,—we must also consider whether there is the right formation of the jaws so that the teeth may erupt in proper alignment. It is important to bear in mind that interest in malocclusion should begin when the child is very young if one expects to exert any influence on prevention or to accomplish the best results in treatment. As will be discussed later, food and mouth habits need careful consideration. Certain correc-

* Assistant Professor of Pediatrics and Child Hygiene at Harvard Medical School.

Read before the Rhode Island Medical Society at the One-hundred and twenty-seventh Annual Meeting, Providence, June 1-2, 1938.

tive exercises may be undertaken as early as the third year. By the time the deciduous teeth have erupted, one can quite accurately predict whether active orthodontic treatment will be necessary. To wait until the permanent teeth are through the gums is to have lost much valuable time. To move teeth which are in bad position is a long, difficult and painful process. Furthermore, when the restraining bands are removed the teeth tend to go back to their former locations. The best results are obtained by so directing the treatment that the teeth may erupt in proper alignment. Such procedures will produce permanent cures.

It is not within the province of this discussion to present the criteria for detecting the various types or degrees of malocclusion,—this belongs in the sphere of the orthodontist. The physician should be aware, however, of some of the signs which indicate the need for special dental care, in addition to the regular supervision for cleaning and filling which every child should receive. The children with glaring forms of malocclusion cannot escape detections; it is the child with the lesser degrees of deformity who may go unnoticed. If the deciduous teeth have erupted and there is no space between them, it is unlikely that the jaws will be large enough for the second set of teeth. When the physician believes that malocclusion of the permanent teeth is a probability the child should be referred to an orthodontist; I say "orthodontist" advisedly, —there are many dentists in general practice who "straighten teeth," but orthodontic care involves more than that. The correction of malocclusion is a specialty requiring expert knowledge and large experience. I wish that the expense of orthodontic treatment could be reduced; many children go through life with malocclusion simply because their parents cannot afford to have anything done about it. It is one of the large items in medical cost which thus far has not been adjusted to the pocketbook of the person of moderate means. I have talked about the economic phase of this subject with my friends among the orthodontists and I am convinced that, taking end results and the comfort of the child into consideration, it is wiser to place the child in the hands of a dentist who specializes in orthodontia. If the child is placed at once in skilled hands much unnecessary treatment may be avoided. By exercises and simple appliances used early, the longer treatment and more elaborate apparatus used by less well-trained men for older children may be avoided.

What can the physician do about malocclusion? Malocclusion results from a variety of factors,— heredity, poor nutrition, obstructed nasal breathing and bad mouth habits. It is prevented or decreased in degree by attention to these matters. Heredity cannot be changed, but if the physician recognizes an inherited jaw formation from which malocclusion will result he may at least be alert to detect the condition early in the child's life and see that corrective measures are started as soon as they will be of benefit.

Nutrition is clearly within the field of the physician. It has been shown by Dr. Percy Howe, Forsyth, Professor of Dental Science at Harvard Dental School, in experimental work with monkeys, that the development of the jaws, as of other bony structures, is directly influenced by diet. The face of the infant grows rapidly and changes markedly in contour. Growth in the anterio-posterio diameter is particularly rapid in the first year of life. This is due to the increase in size of the maxillae to provide space for the teeth. Any deficiency in the diet, particularly in vitamins C and D, results in poor growth of these bones and in jaw deformity. Dr. Cross stated that "90% of the children coming to the Forsyth Dental Infirmary had some form of dental irregularity." Since we have been able to measure the vitamin C content of the blood, numerous studies have revealed the extent to which a deficiency in this vitamin exists. It is possible that there is some connection between these two observations. We are also aware of the widespread presence of rickets and of the changes in bones which are associated with the vitamin D deficiency. The bones of the face share in disturbance of calcium deposition with resultant deformity. Interest in diet, if it is to be wholly effective in producing normal bony development, must extend backward to the diet of the mother during pregnancy and continue throughout the period of childhood.

The child with good heredity and good nutrition may still develop malocclusion if there is obstruction to nasal breathing. With obstruction to the free passage of air through the nasal spaces one finds the whole nose small, no expansion of the alae nasi, the septum deviated, the palate high, the upper jaw narrow and the upper lip short. This is an accurate description of a child whose maxillary bones have not grown normally. The commonest cause of nasal obstruction in children is enlarged adenoids, often associated with enlargement and infection of the

tonsils. We will not enter into the controversial discussion concerning the indications for tonsilectomy but we are willing to state definitely that, when the adenoids are so large as to cause obstruction, the adenoids should be removed even though they may recur later and a second operation be necessary.

Faulty mouth habits may lead to deformity of the mouth and to malocclusion. Thumb-sucking, sucking of a blanket or the tongue, cause a protrusion of the upper jaw, especially of the incisors. The correction of these habits is often a resistant problem but persistence will win in the end. Closely related to mouth habits are eating habits. The jaws grow in response to the need of support for the developing and erupting permanent teeth. The temporary teeth should aid in this process by chewing hard food and exercising the muscles by mastication. The stronger muscles which result from exercise in turn stimulate the growth of the bones of the jaw and thus favor the formation of structures to provide adequate support for the permanent teeth. If the child is given only soft and finely strained food for too long a period, this normal developmental stimulus is lost. When the permanent teeth erupt they are in poor position and chewing is difficult; a vicious cycle has been established, and further malocclusion results.

The other day the mother of a patient came to my office to discuss her child, who had malocclusion. The father was unwilling to have orthodontic treatment; he thought it was "all nonsense"—"just another thing to do to keep up with the Joneses"—and perhaps to improve one's personal appearance —"plenty of people had crooked teeth and got along very well." What can one say to convince a skeptic like this father?

Malocclusion prevents proper mastication of food and is often associated with mouth breathing and poor appetite. Poor nutrition is very likely to be a result. One may suggest a perfect diet for a child but if the child cannot chew properly and has no appetite, he will not benefit by the suggestion, for he will not eat the food. Many undernourished children will show an immediate response to removal of the adenoids and the institution of orthodontic treatment. Removal of the adenoids alone will not be enough to establish good nasal breathing and restore the appetite unless there is good approximation of the upper and lower jaws. Without good nasal breathing there is poor chest development and inadequate lung expansion. Where the nasal spaces are small and poorly developed the accessory nasal sinuses drain poorly and frequently become infected. The child may have headache, malaise and semi-invaladism. It is estimated that 35% of children have extreme oral malformation, interfering with normal growth and development.

There is another quite different aspect which may follow from malocclusion. In speaking, the formation of many sounds is dependent upon the position of the tongue against the teeth. This is especially important in relation to certain consonants. When there is a deformity of the jaws the sounds cannot be produced in the normal manner, and a speech defect occurs. This causes embarrassment to the sensitive or shy child because he is laughed at by other children. This may seriously interfere with his school standing. If the malocclusion is very obvious the child may be conscious of his unattractive appearance and develop a feeling of inferiority directly influencing his whole personality.

From the points of view of both health and happiness, there is ample evidence to indicate the desirability of using every means at our disposal to prevent malocclusion, if possible, and to treat it if it is present. As physicians we have many opportunities to aid in its prevention and, where necessary, to direct our patients to the orthodontist for early treatment.

DO WE CONSIDER THE CHILD AS A WHOLE?

Cleophas P. Bonin, D.M.D.
230 Beacon Street, Boston, Massachusetts

Dentistry is concerned with an area that must be considered as a part of the body. With our present knowledge, the mouth no longer can be divorced and treated separately or disregarded entirely, because oral and jaw conditions are local expression of general disturbances and are but signs of a disease syndrome. For half a century or more, dental curricula have included the basic sciences of medicine, and have increased in quantity and quality to a great extent. For several years, at the Harvard Dental School, we have had a pediatrician on our staff, and two years ago, two other medical men were added. One is an oto-laryngologist who is connected with the Department of Orthodontics,

the other gives courses in oral medicine and blood chemistry as well as conducts clinical research of a fundamental nature. Aside from the fact that the study of medical subjects has broadened the dental student's concept, it is making it possible for him to understand better the serious problems which you must solve. Though Harvard Medical School authorities have seen fit to give medical students a course in dental medicine, it does not include orthodontic diagnosis. However, it is gratifying to see that a rapidly increasing number of hospitals include a dental interne on their staffs so that it would seem that our future physicians will better understand some of our dental problems and be in a better position to lend a helping hand in solving them. At the Children's Hospital, the medical student, in making a medical examination, calls in the dental interne for an explanation of the dental conditions which may exist, and that, gentlemen, is far better than didactic teaching. They are learning with their eyes.

All of us who are interested in the care of children have one great common bond—the welfare of growing children. The mouth contains the great sense of taste. It is the mould for every spoken word. It is in the mouth that voluntary digestion takes place. A normal mouth means much to a child's future development. In the time allotted, I hope to point out early manifestation of malocclusion, to discuss the pernicious habits which become reflexes, and finally to indicate what can be done to prevent serious mouth deformities.

It may be helpful for all custodians of the health of children of this age to know which child is going to have a normal mouth with normal dental arches and normal development of the internal structures of the face, and which is going to have an abnormal mouth and collapsed dental arches accompanied by pinched and collapsed nasal space. Before a group of physicians it is not necessary to dwell long upon the evil effects of mouth breathing, for the treatmen of pathologically altered respiration is within your field of work. I might point out, however, that chronic mouth breathing, brought about usually by enlarged adenoids and diseased tonsils, is a common cause of mouth deformity. When the nasopharynx is blocked by adenoids or diseased tonsils or both, the child in breathing is forced to use the relief valve—the mouth. The continued open mouth and sagging lower jaw upset the equilibrium of the forces of the facial muscles. The constant but slight inward force thus brought about by muscles of the cheek and lip on the delicate developing bones of the face and the dental arches, caused a deformity to both. I wish to emphasize that the early correction of mouth breathing is preventive orthodontia of the highest order. I beg of you, therefore, to see to it that the upper respiratory tract is cleared of all obstructions early in the child's life. However, in those cases of mouth breathing which have come to you after the child has become a dental cripple, the orthodontist stands ready to cooperate with you for the benefit of the child's future.

I must take time to describe briefly the three basic forms of malocclusion. (1) nutroclusion—the relation of the jaws are normal with a protrusion or retrusion of the anterior teeth, and a contraction of both jaws with crowded and rotated teeth, (2) distoclusion — a mandible is displaced backwards from normal. Here we may have a maxillary protrusion or retrusion. (3) mesioclusion — a forward displacement of the mandible from normal.

I shall not engage your attention long on the question of diet, for you can enlighten me more on that subject than I can ever hope to tell you. However, as you all know, it is a phase which affects development, and is an important factor in our work—your help is sincerely solicited. Lack of a well-balanced diet would most certainly affect the growth of a child.

Is it any wonder that we find many a cripple with constricted arches and teeth erupting every which way on the diet many of them are given? Of course, I realize that this is not the only phase to take into consideration. We have the question of inheritance which must be dealt with, for we know that the size of the teeth and familial characteristics are determined at the time of conception. That question is in itself so important and capable of giving us sufficient headaches that we should not allow improper diet to complicate the picture if we can possibly prevent it.

There is still another phase which I must mention in passing, and that is the question of ductless glands. Suffice it to say that we are cognizant of

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Instructor in Orthodontia at Harvard Dental School.

Read before the Rhode Island Medical Society at the One-hundred and twenty-seventh Annual Meeting, Providence, June 1-2, 1938.

their importance and the fact that certain conditions bring on dwarfism, gigantism and acromegaly. However, I am greatly impressed by the possible results which may eventually be obtained from knowing more about them. Perhaps more of our abnormalities are due to endocrine deficiencies in the parent, and suitable treatment at the onset of pregnancy will have its effect on the offspring.

There is still another angle which I am convinced plays a serious part on growth and development, and as far as I know, has not received sufficient attention, and that is, illnesses of childhood. The X-ray reveals arrested development in the long bones of the body. Is it not too much to expect that arrested development is confined to the long bones? The children's clinic under Dr. Losch at the Harvard Dental School, which is conducted from a standpoint of clinical research, proves conclusively that early diseases of childhood are reflected both in the long bones and the jaws.

Conclusion

It is sometimes feared that early orthodontic treatment will upset a child's nervous system. I do not know for certainty if such is the case. In orthodontics, as in all fields of the healing art, any treatment by unskilled hands is dangerous. But, in our field of work, the dangers are much greater the older an individual becomes. Our interest, therefore, centers on the prevention of extreme malocclusion rather than on the cure. These deformities go deeper than mere facial disfigurement, and are so closely allied to the highest nervous centers, that their correction is imperative at an early age. We believe that orthodontic diagnosis should be included in courses given to medical students.

We are greatly handicapped in our work by lack of knowledge in determining the causes of certain deformities. If we knew more about etiology, fewer failures would result. This lack of knowledge is not due to lack of interest. Unlike our mother profession of medicine, dentistry has not received large endowments for research. We have a group of men in the Harvard Dental School who would be willing to give their right eyes for the opportunity to force Nature to reveal some of her secrets which she has held for so long, but lack of funds stops them. Questions which baffle us now must still remain Nature's mysteries.

PROPOSED BASIC SCIENCE ACT FOR THE STATE OF RHODE ISLAND — 1939

Sec. 1. (It is the purpose of this Act to establish a state board of examiners in the basic sciences underlying the practice of the healing art, to provide for its organization and powers, to provide that certification by that board be a pre-requisite to eligibility for examination for license to practice the healing art whether the license is issued after examination or on the basis of a license issued in some other state to the particular applicant, and to define the healing art.)

Sec. 2. No person shall be eligible for examination or permitted to take an examination for a license to practice the healing art or any branch thereof or be granted any such license unless and until he has presented to the proper licensing board or official empowered to issue such license, a certificate of ability in (1) anatomy, (2) physiology, (3) pathology, (4) symptomatology, (5) chemistry, (6) bacteriology, (7) and public health, hereinafter referred to as said basic sciences, issued by the state board of examiners in the basic sciences hereinafter referred to as said board.

Sec. 3. For the purposes of this act, the healing art includes any system, treatment, operation, diagnosis, prescription, or practice for the ascertainment, cure, relief, palliation, adjustment, or correction of any human disease, ailment, deformity, injury, or unhealthy or abnormal physical or mental condition.

Sec. 4. The Director of Public Health, within thirty days after this act takes effect, shall appoint said board to consist of three members. The members of said board shall be appointed one for one year, one for two years, and one for three years. On the expiration of the term of any member, the Director of Public Health shall fill the vacancy by appointment for a term of three years. On the death, resignation, or removal of any member, the Director of Public Health shall fill the vacancy by appointment for the unexpired portion of the term. Every member shall serve until his successor is appointed and qualified. The members of said board shall be selected because of their knowledge of the basic sciences aforesaid, and each member shall be a professor, or an assistant or associate professor, one on the faculty of Brown University, one on the faculty of Rhode Island State College, and one on the faculty of Providence College. Each member

shall have resided in Rhode Island not less than one year next preceding his appointment. No member of said board shall be actively engaged in the practice of the healing art or of any branch thereof.

Sec. 5. Said board shall meet as soon as practicable after their appointment and shall organize by appointing one of its members as chairman and another as secretary. Said board shall have power to adopt a seal which shall be affixed to all certificates issued hereunder, to make such rules and regulations as it deems expedient to carry out the provisions hereof and shall keep a record of its proceedings which shall be prima facie evidence of all matters contained therein. Each member of said board shall receive ten dollars per diem and actual expenses, when actively engaged in the discharge of his duties.

Sec. 6. The fee for the original examination shall be ten dollars. The fee for the first re-examination if made within twelve months of the original examination, shall be five dollars, but the fee for any subsequent re-examination shall be the same as the original fee. Said board shall pay into the state treasury all moneys received as fees under this act.

Sec. 7. Said board shall conduct examinations at such times and places as it deems best. Every applicant, except as hereinafter provided, shall be examined to determine his knowledge, ability, and skill in the basic sciences. The examinations shall be conducted in writing, but may be supplemented by oral examinations, and if practicable shall be supplemented by examinations in the laboratory, dissecting room, and dispensary, and at the bedside. If the applicant receives a credit of 75 pr cent or more in each of the basic sciences he shall be considered as having passed the examination. If the applicant receives less than 75 per cent in one subject and receives 75 per cent or more in each of the remaining subjects, he shall be allowed a re-examination at the examination next ensuing, on application and payment of the prescribed fee, and he shall be required to be re-examined only in the subject in which he received a rating less than 75 per cent. If the applicant receives less than 75 per cent in more than one subject, he shall not be re-examined unless he presents proof, satisfactory to the board, of additional study in the basic sciences sufficient to justify re-examination.

Sec. 8. No certificate shall be issued by said board unless the person applying for it submits evidence satisfactory to said board (1) that he is a citizen of the United States or has taken out his first citizenship papers; (2) that he is not less than twenty-one years old; (3) that he is a person of good moral character; (4) that before he began the study of the healing art he was graduated by a high school accredited by the department of Public Health of Rhode Island, or a school of similar grade, or that he possesses educational qualifications equivalent to those required for graduation by such an accredited school; and (5) that he has a comprehensive knowledge of the basic sciences as shown by his passing the examination given by said board, as by this act required. This shall not be construed to prevent the issue of certificates under the provisions of Section 8 of this act.

Sec. 9. The said board may, at its discretion waive the examination required by Section 7, when proof satisfactory to the board is submittd showing (1) that the applicant has passed in another state an examination in the basic sciences either before a board of examiners in the basic sciences or before a state board authorized to issue licenses to practice the healing art; (2) that the requirements of that state are not less than those required by this act as a condition precedent to the issue of a certificate; and (3) that the board of examiners in the basic sciences in that state grants like exemption from examination in the basic sciences to persons holding certificates from the state board of examiners in the basic sciences of Rhode Island, or holding licenses to practice the healing art according to the method or school that the applicant proposed to follow, issued after examination by the proper licensing board of Rhode Island.

Sec. 10. No provision in this act shall be construed as repealing any statutory provision with reference to the requirements for admission of applicants to examination by any of the various professional examining boards or as dispensing with such examinations.

Sec. 11. No examining board for any branch of healing shall admit to its examinations, or license, or register, any applicant to such board, unless such applicant shall first present to said board a certificate of ability in the basic sciences issued under the provisions of this act.

Sec. 12. The said board may revoke any certificate of ability granted upon mistake of material fact or by reason of fraudulent misrepresentation of fact by any applicant, or when the holder shall be convicted under Section 11 of this act.

Sec. 13. Any licensing board which has issud a license on the basis of a voided or revoked basic science certificate shall revoke or cancel that license. The procedure for such revocation or cancellation shall be in accordance with the provisions of the act under which such license was issued, authorizing the cancellation or revocation of licenses generally. The certificate issued to any person by the state board of examiners in the basic sciences shall be revoked automatically by the revocation of his license to practice the healing art or any branch thereof.

Sec. 14. If any person shall unlawfully obtain or procure a certificate of ability under the provisions of this act, whether by false or untrue statements contained in his application to the board, or by other fraud or misrepresentation, or if any person shall forge, counterfeit, or alter any certificate of ability issued under the provisions of this act, or if any person shall practice healing without securing the certificate required under this act, he shall be guilty of a felony, and shall be subject to the penalties prescribed therefor by law.

Sec. 15. This act shall not be construed as applying to dentists, nurses, midwives, optometrists, chiropodists, barbers, cosmeticians, or Christian Scientists, practicing within the limits of their respective callings; nor to other persons licensed to practice the healing art or any branch thereof in this state when this act takes effect, nor to persons specifically permitted to practice without licenses, practicing within the limits of the privileges thus granted them by said Director of Public Health.

Sec. 16. The General Assembly shall annually appropriate such sums as it deems necessary for the payment of the compensation of members of said board and the state budget director and comptroller is hereby authorized and directed to draw his orders upon the General Treasurer for the payment of said sum, or so much thereof as may from time to time be required, upon receipt by him of proper vouchers signed by the Director of Public Health.

Sec. 17. For the purpose of carrying this act into effect during the fiscal year ending June 30, 1939, the sum of fifty dollars is hereby appropriated, out of any money in the treasury not otherwise appropriated, and the state budget director and comptroller is hereby authorized and directed to draw his orders upon the General Treasurer for the payment of said sum, or so much thereof as may be required, upon receipt by him of proper vouchers signed by the Director of Public Health.

Sec. 18. For the purpose of carrying this act into effect during the fiscal year ending June 30, 1940, the sum of three hundred dollars ($300) is hereby appropriated out of any money in the treasury not otherwise appropriated; and the state budget director and comptroller is hereby authorized and directed to draw his orders upon the General Treasurer for the payment of said sum, or so much thereof as may from time to time be required, upon receipt by him of proper vouchers signed by the Director of Public Health.

Sec. 19. This act shall take effect upon its passage and all acts and parts of acts inconsistent herewith are hereby repealed.

WHAT THIS ACT DOES:

1. Protects the welfare and the health of the people of the State by defining the healing art and by requiring ability in the fundamental sciences underlying the art. (Sections 1, 2 and 3.)

2. Does NOT affect those healers now in practice. (Section 15.)

3. Does NOT discriminate against any system or branch of healing. (Section 8.)

4. Does NOT eliminate the present professional examining boards. (Section 10.)

5. Does NOT permit a healer to be a member of the examining board, but restricts the board to college professors schooled in the basic sciences. (Section 4.)

6. Provides that funds received by the board shall be paid to the State Treasurer, and be disbursed only as appropriated by the Legislature. (Sections 6 and 16.)

7. Does NOT include dentists, nurses, optometrists, etc., practicing within the limits of their respective callings. (Section 15.)

When a physician attends a woman in labor in the absence of another who has been engaged to attend, such physician should resign the patient to the one first engaged, upon his arrival; the physician is entitled to compensation for the professional services he may have rendered.

—*From the Code of Ethics of the A. M. A.*



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THE BASIC SCIENCE ACT

The State Medical Society, through its legislative committee, has introduced during the past month a revised Basic Science Act which it hopes will become a law of this State by enactment of the General Assembly at its present session.

There should be little need to call to the attention of the profession the importance of this legislation. The trend of healing regulation is in the direction of such measures. The states which continue the older and less restricted means of regulation will increasingly become havens for low grade practitioners of all kinds. The duty of protecting the health of the public rests with the medical profession. The proposed basic science law for Rhode Island is a progressive step in maintaining that protection.

The legislative committee has prepared data on the law which has been sent to each member of the General Assembly. Further than that the task falls to each doctor to impress upon all the importance of the pending measure and to seek its early passage.

The proposed act has been revised by the legislative committee, and further amended by voluntary action on the part of the State Dental Society which requested to be included within the provisions of the bill. Such action on the part of the dental profession is to be highly commended, and is indicative of the desire of those having the best interests of the public health at heart to maintain the highest standards possible.

The revised act calls for a board of examiners in the basic sciences, to be composed of three members serving staggered terms of one, two, and three years. One member is to be selected from the faculty of Brown University, one from the faculty of Providence College, and one from the faculty of Rhode Island State College. In each instance the man selected is to be so chosen because of his knowledge of the basic sciences.

Further, each member of the board cannot be actively engaged in the practice of the healing art or any branch thereof. These provisions make for an unbiased, non-partisan board of examiners. Their appointment is to be by the Director of Public Health.

The measure further provides for the regulations for the examination of applicants, for the marking of credits for successful certification, and for the preliminary educational training.

The new board of examiners in no manner supplants any of the existing professional boards, but rather serves as a supplementary board to give the preliminary examination in the fundamental sciences. The act does not apply to nurses, midwives, optometrists, chiropodists, barbers, cosmeticians, Christian Scientists, practicing within the limits of their respective callings, nor to other persons licensed to practice the healing art or any branch thereof in this state when the act takes effect.

THE ADOLPH MEYER BUILDING

This structure is met with, the first on the right as one enters the State Hospital grounds at Howard from Reservoir Avenue. The building houses work of immense importance, representing the most forward-looking program employed in the treatment of mentally ill patients. It means that our State Hospital here in Rhode Island is beginning to escape the shackles binding it to mere asylum care, is being enabled to actively and as effectively treat cases as does the ordinary general hospital in caring for the physically ill.

It is an extraordinarily cheerful building; its color schemes are pleasant, large windows make it bright and sunny, its tastefully arranged flowers, comfortable furniture, are a far cry from the old concept of mental hospitals. It has a capacity of one hundred and twenty beds. Hydrotherapy, physiotherapy, dining rooms, administration offices are all there, conveniently grouped. Meals eaten in the cafeteria in the company of the opposite sex are part of the rehabilitation and readjustment plan.

Important too is the fact that the new medical and surgical units are in close cooperation and foster the same spirit. Man here is not isolated for observation like a bug on a biologist's pin. He is an entire functioning organism. His mental illness is on exactly the same plane as his physical woes. Metrazol and insulin therapy is made possible and, in the hands of competent and careful physicians, has been entirely free from accidents or fatalities.

The Adolph Meyer Building serves as a reception hospital. All new cases are seen here. It offers its facilities to every patient who may have possibilities of improvement through methods of therapy, twenty-eight per cent of the total admissions are detained in this building.

Physicians in private practice are urged to visit, laymen interested in the work are welcomed. The men in charge want their work to be familiar to everyone in the entire State. Send your mentally ill patients here in the same spirit you would send them to a general hospital for a tonsillectomy. It is doing exactly the same sort of work that privately-managed mental hospitals are doing. This is within reach of the moderate income group and need not carry the stigma of charity.

Our colleagues, Drs. Donley and McDonald, conceived and executed this plan and to them should go credit and recognition. Here is a warning of the gravest significance. *Any curtailment whatever* to the operating funds of the State Hospital for Mental Diseases means that the Adolph Meyer Building will be forced to close its doors. All the optimistic enthusiastic program of modern therapy and what it means in the treatment of mental disease will cease and the word hospital in its fullest meaning will have to be abandoned and have substituted in its place the dreary, hope-destroying word Asylum. We don't want this to happen. The Rhode Island Medical Society should be protector and mentor of this so worthwhile project. Let's all get behind it enthusiastically and loyally!

PROVIDENCE MEDICAL ASSOCIATION

Minutes of the March Meeting

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Harry C. Messinger, on Monday, March 6, 1939, at 8:35 P. M. The minutes of the preceding meeting were read and approved.

Dr. Henry S. Joyce, Chairman of the Committee on Group Hospitalization, reported passage by the State Legislature of the Act to create a non-profit corporation for the operation of a group hospital service plan in Rhode Island, and of the subsequent activity of the new corporation.

Dr. Frank B. Littlefield, Chairman of the Membership Committee, reported at length on the study of the membership regulations of the Association, and listed the recommendations of his Committee which included a complete study of the present By-Laws with the view of possible revisions. The report was accepted as read and placed on file.

The President announced that the obituary of Dr. George H. Crooker had been prepared by Dr. Bertram H. Buxton and Dr. John M. Peters, and was on file with the Secretary.

The President announced the following appointments: Committee for the Study of Voluntary Health Insurance and Allied Matters: Dr. Alex M. Burgess, Chairman; Dr. Henry S. Joyce, Dr. William S. Streker, Dr. Harmon P. B. Jordan, Dr. Anthony V. Migliaccio, Dr. Clinton S. Wescott, Dr. J. Joseph Hoey, Dr. William M. Muncy, Dr. Frank B. Cutts, Dr. Herman B. Winkler, and Dr. William B. Buffum.

Committee on Medical Certification, to serve as a sub-committee of the Committee on Tuberculosis and Silicosis: Dr. U. E. Zambarano, Chairman; Dr. Morgan Cutts, and Dr. Banice Feinberg.

Committee to Study the By-Laws and to recommend Revisions: Dr. John G. Walsh, Chairman; Dr. Herman A. Lawson, and Mr. J. E. Farrell.

The business meeting being completed, the program was turned over to Dr. Frank H. Lahey of Boston, who presented the topic, "The Diagnosis and Management of Carcinoma of the Colon and Rectum." Dr. Lahey illustrated his splendid lecture with lantern slides and completed his presentation with a motion picture in color, showing the details in performance of resection of the right colon.

In the discussion which followed, the President first introduced Dr. Neil W. Swinton and Dr. Leo

V. Hand, both staff members of the Lahey Clinic, who spoke briefly. Further discussion was by Dr. Russell S. Bray, Dr. Lucius C. Kingman, Dr. Frederic V. Hussey, and Dr. Samuel Morein.

The meeting was adjourned with a rising vote of thanks to Doctor Lahey at 10:45 P. M. Attendance 310. Collation was served.

Respectfully submitted,

HERMAN A. LAWSON, M.D., *Secretary*

THE MEMORIAL HOSPITAL

PAWTUCKET, R. I.

Dr. James L. Wheaton is recovering from an extended stay in the hospital.

Staff Appointments

Frank C. MacCardell, M. D. to Eye Service, Out Patient Department. Patrick A. Durkin, M.D. to Urological Service, Out Patient Department. Francis L. Burns, M.D. to Ear, Nose and Throat Service, Out Patient Department. Albert J. Gaudet, M.D. to Pediatric Service, Out Patient Department. Laurence A. Senseman, M.D. to Neurological Service, Out Patient Department. James P. Healey, M.D. and Edward Foster, M.D. to Medical Service, Out Patient Department. Jarvis D. Case, M.D. to Obstetrical Service, Out Patient Department. Albert L. Midgley, D.D.S. to the Dental Service of the Consulting Staff.

Staff Transfers

Joseph C. Kent, M.D. transferred from Urological to Obstetrical Service, Out Patient Department. Thomas J. Dolan, M.D. transferred from Medical to Surgical Service, Out Patient Department. John H. O'Brien, M.D. transferred from Medical to Surgical Service, Out Patient Department. Orlando F. Smith, M.D. transferred from Obstetrical to Surgical Service, Out Patient Department.

The Medical Service has inaugurated a monthly conference taking the form of a symposia on various subjects. The first and second medical services have already given a symposia on "Diabetes," "Vitamins," and "Sulphanilimide." The third medical service will give a symposia on "Syphilis" on Friday, March 31, 1939, at 11:00 A. M. The members of the profession in the Blackstone Valley as well as the staff are invited to these conferences.

At the Clinical Pathological Conference held on March 8, 1939, cases from the medical service were presented. The first case was presented by Dr. Greenstein, from the first medical service; diagnosed as cardiac with the complication of a polycystic kidney.

The second case of inoperable ruptured appendix with cerebral accident was presented by Dr. Barr from the third medical service. This case was discussed by Drs. Hussey, Shaw, Davis, Moor, Greenstein, Benjamin, Eddy, Smith, Field, Durkin and Marshall. In closing there was a discussion by Dr. John F. Kenney.

RHODE ISLAND HOSPITAL

SCHEDULE for APRIL 1939

MONDAYS:

Thoracic Clinic, 4:30 P. M.
Surgical Conference, 12 Noon, April 10, 24.

TUESDAYS:

Gastro-Intestinal Clinic, 9:30 A. M.
Path. Conference, 12 Noon, April 11, 25.

WEDNESDAYS:

Tumor Clinic, 10:00 A. M.

THURSDAYS:

Orthopedic Grand Rounds, 9:00 A. M.
Thoracic Clinic, 11:30 A. M.
Gyn. Staff Meeting, 8:30 P. M., April 6.

FRIDAYS:

Fracture Rounds, 11:00 A. M.
Pediatric Grand Rounds, 11:00 A. M., April 7, 21.
Heart Conference, 11:30 A. M.
G. U. Staff Meeting, 7:30 P. M., April 7.
Surgical Staff Meeting, 8:30 P. M., April 7.

SATURDAYS:

Neurological Grand Rounds, 9:00 A. M.
Medical Conference, 10:00 A. M.

Dr. John T. Keohane of Providence, a graduate of Providence College and Georgetown University Medical School, began an internship on February 1st. Dr. Keohane interned for one year at St. Mary's Hospital, Hoboken, N. J. and four months at the Charles V. Chapin Hospital, Providence.

On December 24, 1938, at Providence Lying-In Hospital, to Dr. and Mrs. Lawrence A. Martineau, a daughter.

Charles V. Chapin Hospital

On April first, Dr. Henry N. Russell, Jr., Dr. Elizabeth Lewis, and Dr. Harold J. Eisenberg completed their internships at the Charles V. Chapin Hospital. Dr. Russell, a graduate of Princeton University and Harvard Medical School, will commence a service at the Massachusetts General Hospital.

Dr. Harold J. Eisenberg, who was graduated from Long Island College of Medicine in 1935, is returning to the Long Island College Hospital for a residency in pediatrics.

Dr. Elizabeth Lewis, a graduate of Tufts College Medical School, started her internship on October first, coming from the New England Hospital for Women and Children. She is the wife of Dr. F. Woodward Lewis who is at present an intern at the Rhode Island Hospital.

Dr. Edgar S. Highberger of Greensburg, Pa., a graduate of the Johns Hopkins University Medical School started a four-month internship on March first.

OBITUARY

VANCE LEE FITZGERALD, M.D.

Dr. Vance Lee Fitzgerald, a member of the Providence Medical Association since 1896, died at the Memorial Hospital, Pawtucket, on September 24, 1938, of myocarditis.

Dr. Fitzgerald was born in Castile Hill, Maine, December 12, 1862, the son of James and Rachel Foster Fitzgerald. He obtained his early education in his home town, later removing to Portland, Maine, where he prepared for entrance to Bellevue Hospital Medical College, from which he obtained the degree of Doctor of Medicine in 1896.

He immediately engaged in practice in Providence and continued in active work until a few months before his death. For the first few years he did a general practice but after a period of Post Graduate study in New York and Boston he specialized in gastro enterology and proctology, being one of the earliest in Providence in that branch of medicine.

He was for a time connected with St. Joseph's Hospital and was for several years a member of the Providence School Committee.

In the earlier years Dr. Fitzgerald resided in Providence but for the past twelve years his home has been in Barrington, with his office in Providence at 223 Thayer Street.

Dr. Fitzgerald was a life member of the American College of Surgeons, a member of the American Medical Association, a Fellow of the Rhode Island Medical Society, and a member of the Amos Throop Club.

He married in 1901 Miss Lida Towle of Bangor, Maine, and is survived by his widow and two daughters.

George L. Shattuck, M.D.
Herbert G. Partridge, M.D.

WILLIAM A. HILLARD, M.D.

Doctor William A. Hillard passed away on July 1st, 1938, at his home, 147 West Broad Street, Westerly, Rhode Island, in his sixty-seventh year. He was born in Westerly August 20th, 1870, attended the public schools and graduated from its High School in 1889. Entering Columbia University the following autumn and graduating from the Medical Department in 1893. After finishing his medical training he opened his first office in Manchester, N. H., and practiced general medicine there until April 1896. Having married the previous year he then returned to Westerly and opened an office in his old home and there remained until his death.

Doctor Hillard joined the Washington County Medical Society April 1898. He served as its Secretary from October 1913 until October 1928. He was a loyal member and a hard worker for the Society until the end. He was one of the founders and a charter member of The Westerly Physicians Association and served as its Secretary throughout the life of the Society. Doctor Hillard enjoyed an extensive practice and was recognized as a very capable and successful physician. He was connected with the Westerly Hospital since its opening. Soon after coming to Westerly he took an ardent interest in the civic activities of the town and was an active unceasing worker for the community until his death.

He is survived by his wife, Addie M. Hillard, one son Paul, of Albany, New York, and one grandchild. A true lover of his home and family, he took keen delight in surrounding them with the comforts and luxuries of life. His genial and calm disposition won him friends everywhere, social, political and professional. He will be greatly missed and respectfully mourned.

Walter E. Grenolds, M.D.
John W. Helfrich, M.D.

NATIONAL TUBERCULOSIS ASSOCIATION

The 35th Annual Meeting of the National Tuberculosis Association will be held at Boston, June 26-29, 1939. All of the sessions are open to any physician who wishes to attend. There is no registration fee nor is it necessary for one to be a member in order to attend the meetings. Dr. Reginald Fitz, 78 East Concord Street, Boston, is the Chairman of the Committee on Arrangements.

Tentative Calendar of All Sessions

MONDAY, JUNE 26

9:30 A.M.—American Sanatorium Association
National Conference of Tuberculosis Secretaries
2:00 P.M.—American Sanatorium Association
National Conference of Tuberculosis Secretaries
6:00 P.M.—Dinner and opening general meeting

TUESDAY, JUNE 27

9:30 A.M.—Joint Medical Session — Pathological and Clinical Sections
Joint Lay Session—Social Work and Administration Sections
2:00 P.M.—Pathological Section
Lay Clinics—Administrative Section
8:30 P.M.—National Conference of Tuberculosis Secretaries Play Night, "Pop Concert"

WEDNESDAY, JUNE 28

9:30 A.M.—Clinical Section
Social Work Section
12:30 P.M.—College Hygiene Luncheon
2:00 P.M.—Joint Lay Session—Social Work and Administrative Sections.
Medical Clinics—Pathological and Clinical Sections
8:00 P.M.—X-ray Conference

THURSDAY, JUNE 29

9:30 A.M.—Joint Symposium of all sections on "Mass Tuberculin Testing and X-raying"
12:15 P.M.—General Session and Business Meeting

AMERICAN BOARD OF INTERNAL MEDICINE, INC.

Written examinations for certification by the American Board of Internal Medicine will be held in various sections of the United States on the third Monday in October and the third Monday in February. Formal application must be received by the Secretary before August 20, 1939 for the October 16, 1939 examination, and on or before January 1 for the February 19, 1940 examination. Application forms may be obtained from Dr. William S. Middleton, Secretary-Treasurer, 1301 University Avenue, Madison, Wisconsin, U. S. A.

PRELIMINARY REPORT OF HEALTH DEPARTMENT ACTIVITIES

PROVIDENCE, RHODE ISLAND, FOR THE YEAR 1938

The accompanying preliminary statistical report of the activities of the Health Department and of the Vital Statistics of the City of Providence gives an opportunity to evaluate conditions as they exist. While the department is justifiably proud of the record, credit belongs not alone to the department but is to be shared by all participants in the public health program, the private practioner, the private and public agencies and the GENERAL PUBLIC. The low death rate, the low infant mortality death rate and the low maternal death rate may be considered as evidence of the high standard of medical and nursing care furnished the citizens of Providence.

It is very interesting to note that fifty years ago more people under the age of seventy died in the City of Providence than in 1938 for the same age group. This is more striking when one considers that the population in 1938 was nearly twice that of 1888. The saving in life was effected primarily in the age group under one year through better infant care; and among the young children the saving in life was due to better care and to control of the acute communicable diseases, while in the young adult group to the advance made in the control of tuberculosis. The campaign against traffic accidents was also an important factor in achieving the low mortality record.

A study of the immunization figures shows that the tendency is for this work to be done more and more by the private physicians, especially the pediatricians. While the number of immunization treatments performed by the Health Department has fallen off, the fact remains that there has been a continued marked decrease in the actual cases of diphtheria, and there is a high percentage of immuned children found in the entering classes of school. However, unless private physicians keep this department informed of the immunization treatments they are doing, we may be lulled into a situation of false security and slacken the reins of the program, which in turn may be responsible for a large number of non-immunes and the rise of a serious epidemic.

The figures show that we have established records for low mortality in practically all the communicable diseases but that there is need for a great deal of work in the control of whooping cough. In

1938 there were five deaths for this disease as compared with ten deaths in 1937, but for both years the deaths for the under-one year age bracket were five. With a little better cooperation in the reporting of this disease, and more intensive education of the parents to the fact that this is a dangerous disease among infants we believe we might achieve a much more enviable record in controlling the mortality, if not the mortality of this disease, perhaps as satisfactory as the record for the large measles epidemic of 1936-37 when not a single child died.

While public health is undoubtedly a purchasable commodity, its cost may be reduced through the cooperative efforts of all. Public Health is Everybody's Business!

Vital Statistics	1938	1937
Deaths all	3230	3465
Deaths under 1	222	256
Deaths over 70	1095	1029
Births	5551	5377
Marriages	1818	2415
Infant Mortality	39.99	47.61
Death Rate	13.50	14.26
Birth Rate	22.84	22.12
Principal Cases		
1. Heart Disease	833	861
2. Cancer	484	465
3. Pneumonia	266	287
4. Nephritis	271	277
5. Cerebral Hemorrhage	214	234
6. Auto Accidents	30	63
Laboratory Examinations		
Chas. V. Chapin Hospital	34,409	34,366

Milk Department	1938	1937
No. Samples Tested	21,260	22,378
No. Licenses Issued	1,838	1,937
Physicians		
No. Visits to Sick Poor	9,766	8,808
Nursing Visits		
Communicable Dis. Visits	10,704	17,221
Child Hygiene Visits	25,712	25,684
Parochial School Visits	5,362	5,849
Diphtheria Immunization	1938	1937
No. Schick Tests	3,979	3,215
No. Alum Toxoid Treatments	2,902	3,107
Smallpox Immunization		
No. Vaccinated	2,937	2,585
Inspectors		
Food Inspector:		
Inspections	5,536	5,838
Licenses Renewed	1,911	2,293
Licenses Not Approved	6	5
New Licenses	170	219
Transfers	127	159
Withdrawals	11	1
Sanitary Division:		
No. of Visits	4,827	4,016
Dogbite Visits	627	205
Yard Survey	15,662	20,248
Licenses Approved:		
Lodging Houses	0	2
Garbage	22	23
Kennel	23	45
Privy Inspections	126	
Flood Inspections	15,000	
Child Health Stations		
Visits by Children	13,188	12,451

COMMUNICABLE DISEASES

	Cases			Deaths*		
	1938	1937	1936	1938	1937	1936
Diphtheria	2	9	20	0	3	1
Scarlet Fever	388	1148	589	1	7	7
Measles	18	3763	559	0	0	0
Whooping Cough	1030	1333	463	5	10	3
Pulmonary Tuberculosis		118		78	94	102
Typhoid and Paratyphoid Fever	12	9	16	0	1	2
Poliomyelitis	1	9	1	1	1	0
Epidemic Encephalitis	1	3	3	3	1	1
Epidemic C-S Meningitis	6	17	25	4	9	17
Rocky Mt. Spotted Fever	0	2	0	0	0	0
UndulantFever	0	3	3	0	0	0
Ophthalmia Neonatorum	0	3	1	0	0	0

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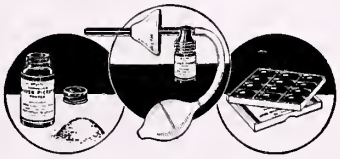
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HEALTH DEPARTMENT ACTIVITIES

PROVIDENCE, FEBRUARY, 1939

Attention is called to the case of diphtheria reported in February of this year. This is the first case reported since last June. We trust that there will be no abatement in the immunization program.

Attention is also called to the seven deaths, all under two years of age, from whooping cough, which occurred in this city during January and February of this year. This is two more than we had for the entire year of 1938. We must remember that whooping cough is a dangerous disease among infants.

Vital Statistics	
Deaths all	257
Deaths under 1	14
Deaths over 70	77
Births	393
Marriages	95
Infant Mortality	35.6
Death Rate	13.79
Birth Rate	21.09

Principal Causes

1. Heart Disease	77
2. Cancer	27
3. Pneumonia	20
4. Nephritis	19
5. Cerebral Hemorrhage	14
6. Auto Accidents	2

Communicable Diseases	*Cases*	**Deaths**
Diphtheria	1	0
Scarlet Fever	30	0
Measles	34	0
Whooping Cough	123	3
Pulmonary Tuberculosis		7
Epidemic C-S Meningitis	1	1
Bacillary Dysentery & Gastro Ent.	1	0
Septic Sore Throat	11	0

Includes Non-Residents

MICHAEL J. NESTOR, M.D.,
Superintendent of Health.

AMERICAN ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS AND ABDOMINAL SURGEONS FOUNDATION PRIZE ESSAY

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons announces that the annual Foundation Prize for this year will be $100.00 Those eligible include only (1) interns, residents, or graduate students in Obstetrics, Gynecology and Abdominal Surgery, and (2) physicians (M.D. degree) who are actually practicing or teaching Obstetrics, Gynecology of Abdominal Surgery. Competing manuscripts must (1) be presented in *triplicate* under a nom-de-plume to the Secretary of the Association before June 1st, (2) be limited to 5,000 words and such illustrations as are necessary for a clear exposition of the thesis, and (3) be typewritten (double-spaced) on one side of the sheets, with ample margins. The successful thesis must be presented at the next annual (September) meeting of the Association, without expense to the Association and in conformity with its regulations. For further details, address Dr. James R. Bloss, Secretary, 418-11th Street, Huntington, W. Va.

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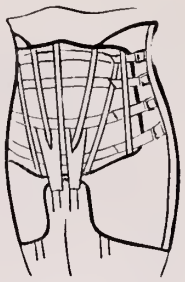
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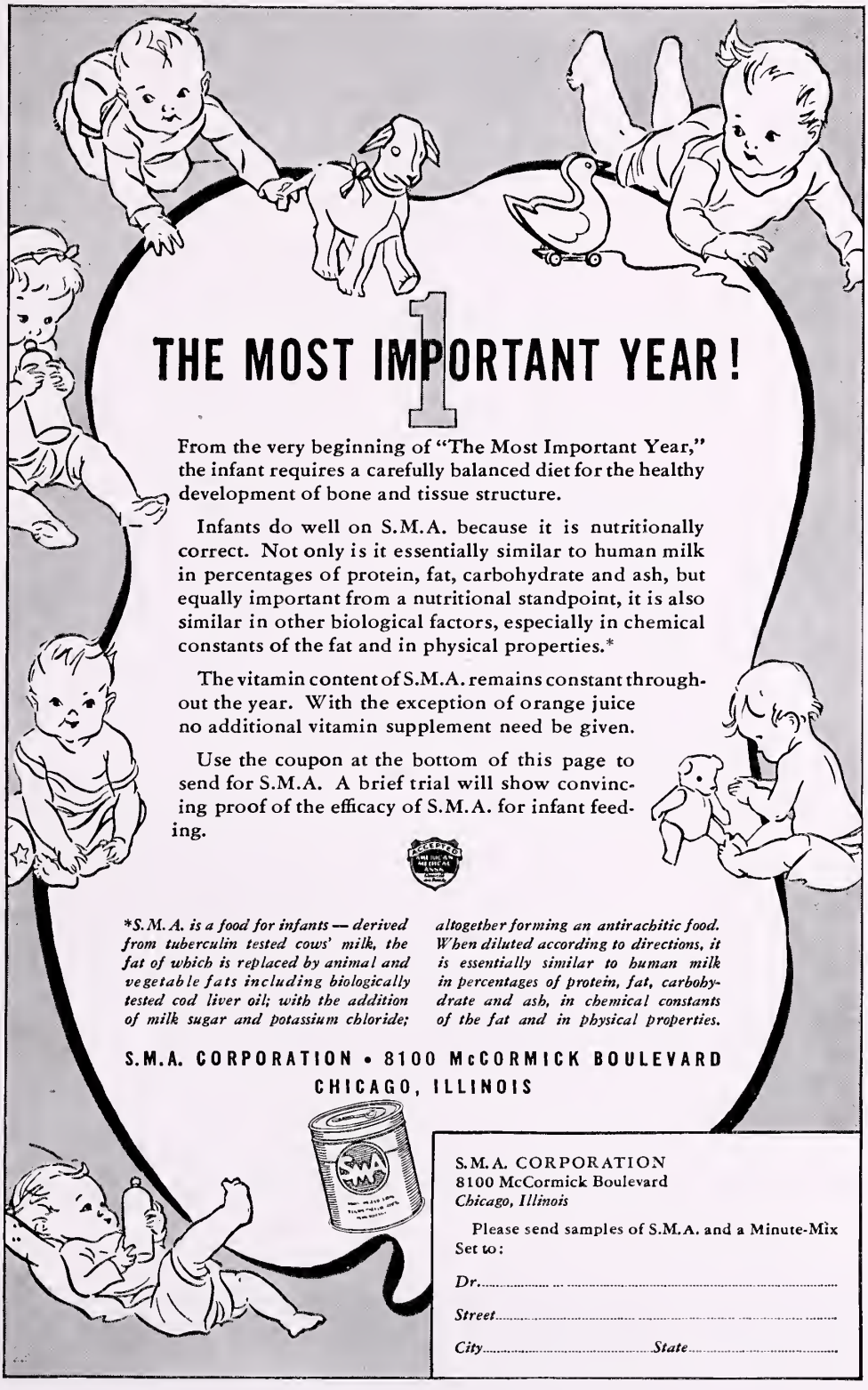


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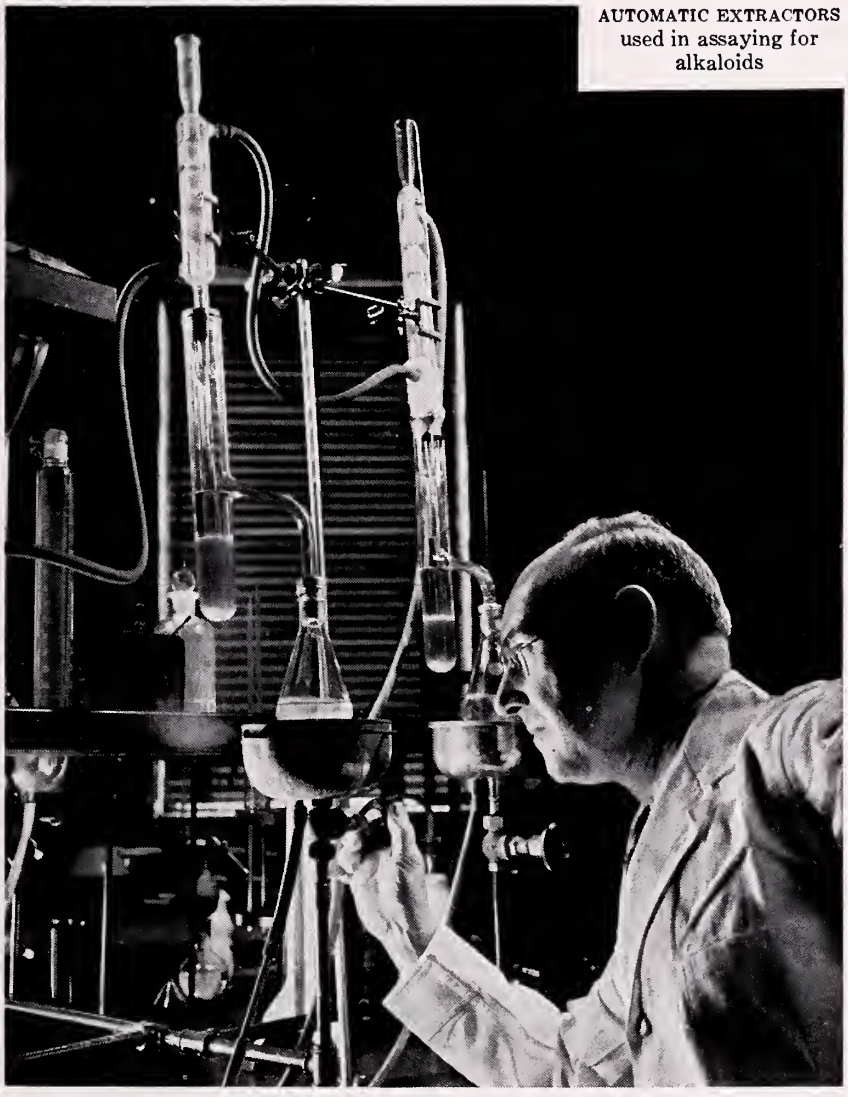
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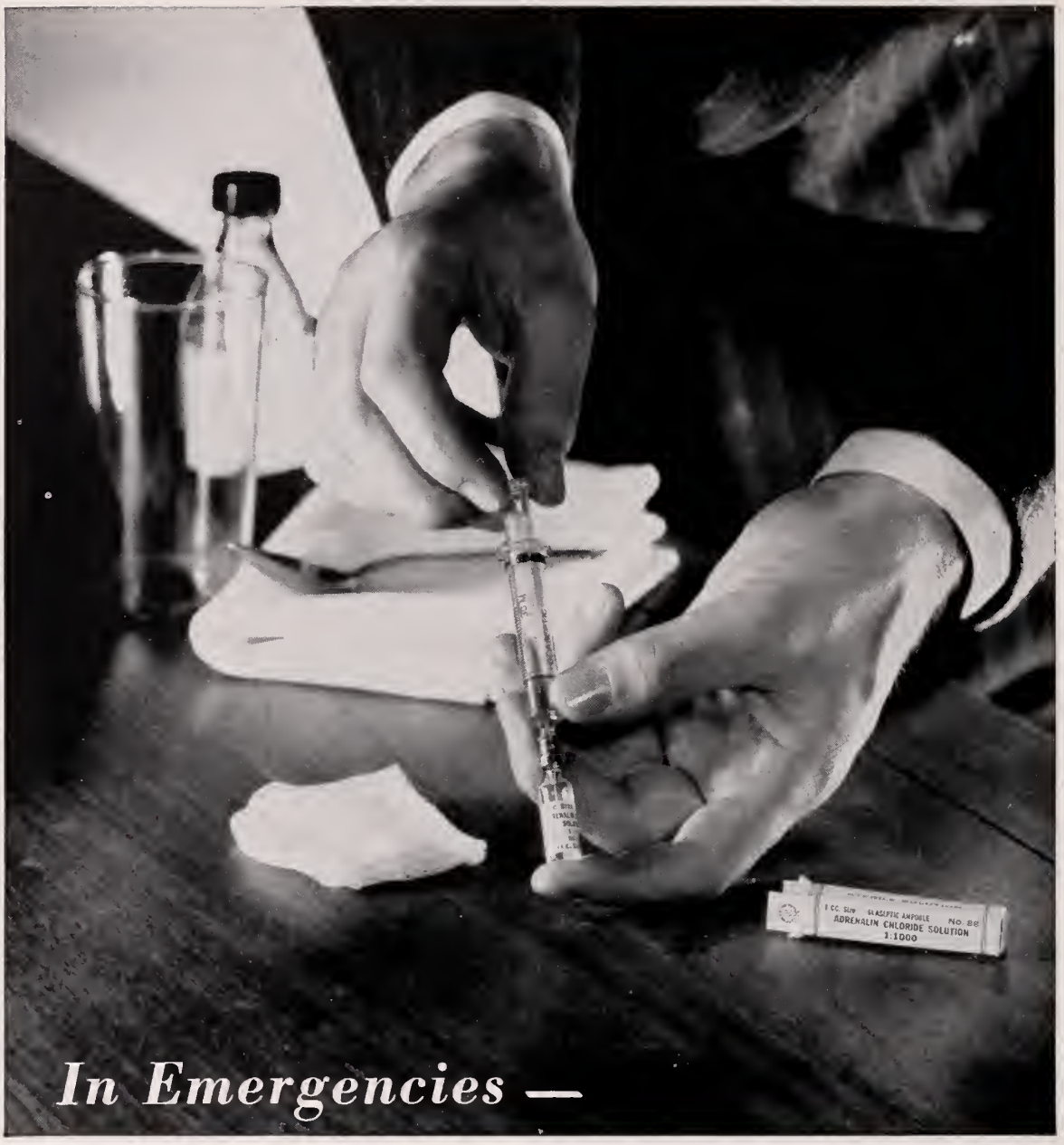
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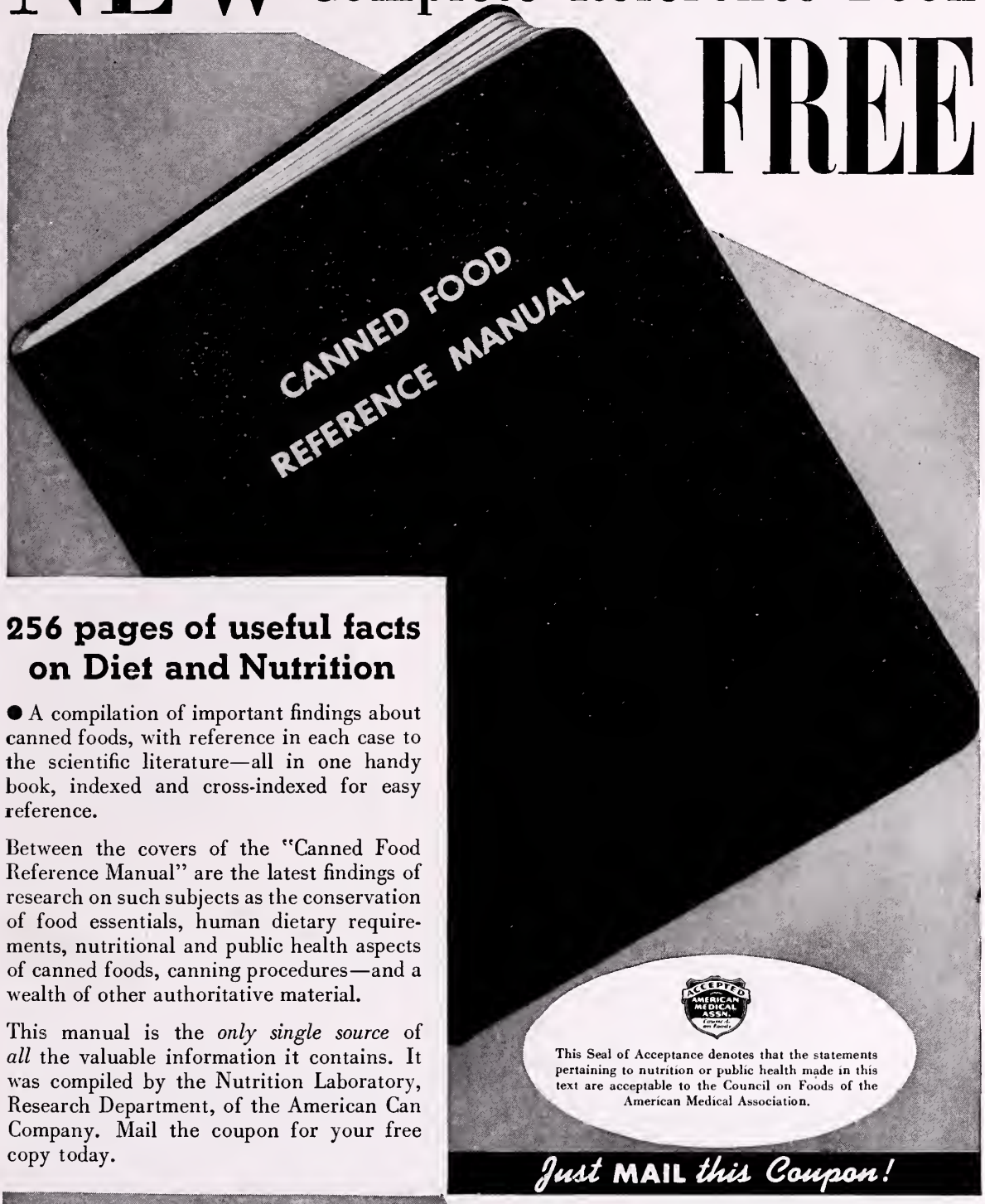
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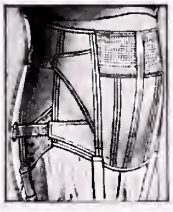


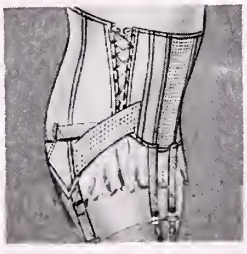


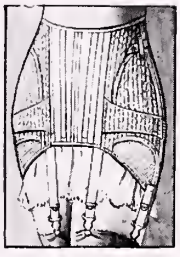
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THE RHODE ISLAND MEDICAL JOURNAL

VOLUME XXII MAY, 1939 NUMBER 5

CHRONIC PROSTATITIS

HOWARD K. TURNER, M.D.

199 THAYER STREET, PROVIDENCE, R. I.

The term "Chronic Prostatitis" covers, rather loosely, a wide scope of disorders of the genital tract. I do not wish to discuss the chronic prostatitis which follows in the immediate wake of gonorrhœa and which is readily cured by a course of massage and irrigation. Nor do I care to include those cases that follow acute gastro-intestinal or upper urinary tract infections and are likewise readily cured. I do, however, want to talk about those cases of chronic prostatitis that come on insidiously and do not usually get entirely well. They are prone to have one recurrence after another and often acute exacerbations with flare-ups of infection in distant parts of the body such as iritis, neuritis, arthritis, bursitis and the like.

This type of prostatitis is exceedingly common and widespread. Wiseman in doing routine complete physical examinations on 200 men of all age groups found chronic prostatitis in 108. Pelouse thinks that 35% of all men over thirty-five have it. The greater portion of these people are practically symptomless and do not consult a doctor. The symptoms of chronic prostatitis are so many and so varied that many patients do not suspect the genital tract at all. As a rule there are no bladder symptoms save for some occasional burning urination or a feeling of wanting to void after having emptied the bladder. A few patients will be disturbed by a morning drop at the meatus and will present themselves because of this.

Quite frequently sexual symptoms are predominant. Patients complain of premature or painful ejaculation, loss of libido or complete impotence. Many of this group are neurotic and describe to the minutest detail their queer sensations in the perineum, scrotum, urethra and anus. The curious thing about such patients is that they conform to type. The lengthy and fantastic descriptions of crawling sensations and itching in the urethra, and the perineal and ano-rectal aches and pains are so typical and so much alike in every case that they automatically suggest the correct diagnosis.

When patients complain of low back pain extending into the groin, scrotum or suprapubically and when it is accompanied by an indurated prostate whose secretion contains pus cells and non-motile spermatozoa, they may be properly said to be suffering from prostatic backache.

Because patients are allergic to their prostatic infections they may complain of arthritis, neuritis, vasomotor skin disturbances, low abdominal pain simulating appendicitis and functional gastric disorders. Iritis and retinitis are often due solely to infection in the prostate. They do not get well when teeth, tonsils and sinuses are treated but clear up promptly when the infection in the prostate is drained.

Head's classical explanation of surface pain from visceral origin as a spilling over of afferent sympathetic nerve impulses into areas supplied by corresponding spinal segments applies also to prostatic pain. The sympathetic nervous system relays prostatic pain to the primary cells in the ganglion. It is then sent out through the many connecting ramifications to the organs supplied by the ganglion. Thus symptoms not only of pain but also related to the function of the affected organs are produced.

Worry, excitement and anger are known to aggravate prostatic pain.

It is a common belief that previous attacks of gonorrhœa are responsible, in the main, for chronic prostatitis. I do not believe this fact to be true. I can see how a prostate gland, badly damaged by a gonorrhœal prostatic abscess, would be so scarred and distorted in its anatomical relations that drainage would be permanently impaired. In the main, however, gonorrhœa does not produce that pathological condition. I am convinced that the most important single factor in the production of chronic prostatitis is what may be called faulty sex physi-

Read before the Providence Medical Association, April 3, 1939.

ology. By that I mean virtuous petting parties, the perusal of erotic literature, the current sex stimulating movies and what one might call unphysiologic intercourse arising from a desire for contraception. By such practices chronic congestion of the seminal vesicles and prostate is produced, which if continued for a long time lowers the resistance of these structures so much that non-specific infection is prone to develop. Bacteria reach the prostate from the urethra and by way of the lymphatics and blood stream. Chronic foci of infection such as the teeth, tonsils, sinuses, gall bladder, bowel and other locations, may be sources of a continuous supply of bacteria to the prostate—Cumming thinks that 98% of all cases have at least one such focus.

Prostatitis often accompanies chronic renal infections. Infected urine passing through the prostatic urethra causes infection to extend up the ducts and into the glands. It follows, of course, that the treatment of such cases should be directed toward the upper urinary tract.

The diagnosis is suggested by the symptoms just enumerated. Examination with a finger in the rectum will show an indurated and nodular or a soft, swollen and boggy gland. It may or may not be tender. The prostate may even seem normal to the palpating finger but microscopic examination of the expressed fluid will show it to contain many pus cells. Cultures taken from the fluid will identify the offending organism. The organisms usually found are staphylococci, colon bacilli, streptococci and rarely proteus and gonococci. Trichomonas are occasionally found in the wet smear.

Examination of the prostatic urethra with the cystourethroscope, in appropriate cases, will occasionally show widely dilated and patent prostatic ducts which are, however, usually post-gonorrheal. Granulations along the gutters on either side of the verumontanum are commonly found. Once in a while polypoid growths are seen.

One will see chronic pyogenic prostatitis due to prostatic calculi often enough to pay to remember them as a reason why patients do not respond to ordinary treatment. Fortunately, the diagnosis of prostatic calculi is suggested by a definite sense of creptius imparted to the examining finger. It is easily confirmed by the X-ray but not so easily cured by surgery which, incidentally, should always be done through a perineal approach.

Prostatic massage is the most universal therapeutic measure. It is done, as Pelouse has put it, to digitally encourage drainage. But massage also squeezes into the patient's lymphatics and circulation some of his own bacteria. This is autovaccination and, to use the words of the late Frank Kidd, "is the reason why prostatic massage should not be repeated more than every fourth day and should be carried out with gentleness and without force; prostatic massage is true vaccine treatment."

O'Conor has shown by elaborate experiments on dogs that a single massage produces moderate round cell infiltration of the septa and alveolar walls. If massage is kept up daily for seven days, the dog's prostate on removal shows many areas of complete rupture of the alveolar walls together with scattered cystic formations.

It is quite important that the technique of prostatic massage should be carried out with a definite purpose in mind and always remembering that the injudicious use of massage can be definitely harmful. The gland should be stroked only in the direction of the course of the emptying ducts, that is, from above and laterally downward and medially. The mid-line should not be crossed with the sweep of the finger. The pressure should be firm but gentle and not over fifteen strokings should be given at one sitting. The massage should not cause pain nor faintness. Occasionally odema of the face and tongue will be observed after massage but the reaction is allergic and is not the result of faulty massage. It seems logical to instill 25 or 30 cc. of appropriate antiseptic, such as 1% mercurochrome, 1-1000 acriflavine or 1% neoarsphenamine, into the posterior urethra and bladder before the massage. Clinically this procedure is usually followed by improvement.

Stretching the posterior urethra with a Kollman dilator will help in stubborn cases. The dilator causes absorption of fibrosis in the urethra and dilates the mouths of the prostatic ducts.

The application of heat to the prostate by means of hot rectal irrigations, diathermy or the Elliott machine is certainly beneficial as an adjunct to treatment. Lewis reports that the Elliott treatment will cure 11% of the cases and that it improves a good portion of the remainder. Hot rectal irrigations which patients can conveniently give themselves at bedtime, using Boyd's two-way irrigator, are helpful.

We think that cultures of the prostatic fluid are quite necessary to properly treat prostatitis. When one is dealing with staphylococci, 1% neoarsphena-

mine solution locally and a course of five or six intravenous injections will be of great help. Antistaphyloccus serum (Lederle in doses of 1.0 to 2.5 cc. at six-day intervals until 5,000 units are given should be used in resistant cases.

Mandelic acid and sulfanilamide should be used in colon bacilli prostatitis; in the streptococcus infections sulfanilamide is indicated. Sulfanilamide is definitely excreted by the prostate in an appreciable amount.

Vaccines, in our hands, have been quite disappointing. We have had some small success with autogenous vaccines prepared from hemolytic Escherichia coli only.

The questionable procedure of intra-prostatic injections may be indicated in certain severe and chronic cases that fail to respond to other forms of therapy. Grant, Townsend, Von Lacknm, Ritter and others have a good word for this treatment which consists of injecting antiseptic solutions into the substance of the gland through a needle introduced either through the perineum, rectal wall, or through the urethra by means of an endoscope. O'Conor and Ladd have demonstrated by prostatic injections into the prostatic substance in dogs that the introduction of any solution sets up an intense inflammatory reaction in the gland which is followed by fibrosis and obliteration of many of the acini. It has been suggested by Grant that it is the sclerosing process rather than the antiseptic value of the injected solution that produces a cure. He has used the method for seven years and reports no bad results. In general, I think, this method is not accepted but it should be considered when one is dealing with an infected prostate which is obviously the focus of infection responsible for severe and disabling secondary processes in some distant part of the body.

It is quite apparent that the control of intimate and fixed habits of patients with chronic prostatitis offers the most baffling problem. Alcohol is excreted by the prostate and testicle in about the same concentration as it is excreted by the kidney. Patients must not drink alcoholic beverages if they want to be cured of prostatitis. However, when patients are improved by treatment the desire for one or two drinks often outweighs the desire for abstinence and a doubtful promise of complete cure. The same holds for aberrant sexual practices. It may well be that practically all of the failures to actually cure rather than temporarily relieve these patients are due to these factors.

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DIVERSION, RELAXATION AND SLEEP

Elihu S. Wing, M.D.
199 Thayer Street, Providence

In these strenuous and anxious times it seems appropriate to discuss proper diversion, relaxation and sleep and the establishment of better poise as important in offsetting the debilitating effects of prolonged nervous or mental tension associated with such factors as overwork, worry, anxiety, jealousy, and fear. These insidiously acting states, if allowed to sap your reserve forces will sooner or later lead you into difficulties which will impair your effectiveness in work, your own happiness and that of your family. Furthermore, they will produce functional symptoms which will lead to physical discomfort, impair your resistance to disease, and will, over a period of time, either initiate or combine with other factors to produce real organic changes affecting particularly the arteries, the heart and the digestive tract, as well as the endocrine or ductless glands.

Based on a radio address over Station W P R O, Sunday, April 2, 1939, under the auspices of the Committee on Education, State and National, of the Rhode Island Medical Society.

We have two types of nerve tissue. One—voluntary—which acts on the muscles controlling physical effort. The other—involuntary—controlling the action of the heart, arteries, the digestive tract, glands, and skin. It is the latter that gets the greater abuse, particularly through our emotional states. This nervous system is highly organized; its sensitivity varies in different people. The more artistic and imaginative the individual the more sensitive the mechanism which controls his functions. One's fitness, one's effectiveness or one's success must come eventually through continued control of the nerve impulses, especially emotional, which course through the body.

An example of this is seen in the story of Mr. X, who recently came into my office for a physical check-up, believing that something must be physically wrong because his heart was pounding, sometimes irregularly, and he became short of breath on walking up hill. He was tense and tired easily. His appetite was not good. He complained of indigestion, bowel and other difficulties. His wife volunteered the information that he was increasingly nervous and irritable, slept poorly, worried much and seemed very different from what he used to be.

This is a frequent story in both women and men. The solution of the problem is not in drugs, except for specific purposes, but rather in finding out what is causing this change. All too frequently it is overstrain brought about by too long hours of strenuous, nerve-racking work, domestic discord, disappointments, financial reverses, unhappy love affairs, sickness in the family or other strains. Some of these can be corrected or ironed out. Those that cannot be altered must be met by improving one's philosophy of life or attitude toward the problem. It is proper first to have a thorough physical examination because physical disease must be ruled out. Then the individual must take stock of his native reserve force. He must know himself, his weaknesses and strong points. With this evaluation, Mr. or Mrs. X can arrive at an understanding of the mechanism or the factors that are operating in the sapping of his or her vitality and resistance and adopt the corrective measures.

Knowledge of one's self comes first, then appreciation or understanding of one's problems in life or, in other words, knowing if there are incompatabilities existing between the individual and his work or contacts in life. Here there is an opportunity to alter or modify conditions in order that they may better fit one's strength, temperament, abilities, and training. It is necessary to work harmoniously with one's environment, otherwise there cannot be proper relaxation. It is no different from the problems of the sailor. He must know his craft, the wind and tide; and with his hand on the tiller, with shift of sail, he can make good headway, or panically lose ground, according to his reserve strength, courage, resourcefulness, training, and judgment. Certainly he would not put out in a sea that his craft or his skill was not fitted to cope with. Yet sometimes a squall will come up which will test his skill and judgment to the limit. It is here that his reserve forces will tell the story.

Several years ago, a patient gave this story: He found himself getting short of breath on inclines, had palpitation of the heart, wakened at night with a feeling that he could not breathe easily and had some distress in his chest. A tensive, hard working individual, he related that in the stress and strain of important board meetings, of which he was chairman, he felt some of these symptoms, particularly when he became irritated. His blood pressure, when I saw him, was normal. Purposely, I induced in him a state of anger and resentment. His blood pressure then showed a rise of nearly fifty points. Then I talked with him about his favorite hobby—he became absorbed and relaxed. Again his blood pressure was normal. After these figures were placed before him, he altered his former habits in life and business and for the last ten years has felt quite well. He seriously adopted diversion, relaxation in work, and sleep, to good effect.

Another patient, a tensive, over stout, hard working man, ate too much and took too little exercise and diversion. He had too much drive and could not seem to relax. He not only showed an increase in his blood pressure but his kidneys were not keeping up with their burden. After a period of rest and relaxation with reduction in weight, his physical condition became normal.

One very pernicious habit of many people is to talk repeatedly about their feelings or symptoms, their illnesses or operations, or their hard luck, both in the home and at social functions or in contact with their friends. Do you realize that by doing so, you are not only making your own nervous state worse, undermining your usefulness as well as your popularity, but you are furthermore unwittingly drawing upon the sympathies and reserves of your family and friends and making it harder for them to meet their problems?

It is far more healthful to try to adopt an optimistic attitude, to turn your thoughts away from yourself, to put on a bold front and a smile and say all is well with the world. There are times, however, when pent up emotions require release and the telling of your troubles to someone helps you. In this instance choose someone who can be a wise counselor; it may be a close friend, your religious advisor, or your physician. Repeated rehearsals, by thought or expression, of depressing experiences serve only to perpetuate or keep alive these unhappy episodes in your life. Those who resort to this kind of interest in life are not only thoughtless and selfish but they are doing injury to the cause of mental and physical health. Other people too often lay the blame for their state of affairs on someone else and become intolerant, too often seek excuses, build up defense mechanisms in an effort to justify their situation or to get by. Some resort to drugs or alcohol. These methods tend to prolong the difficulties. They are false and often vicious solutions of the problems and are definitely opposed to the principle of diversion, relaxation, and restful sleep.

How can we offset these devitalizing factors of overwork, nerve strain, worry, anxiety, jealousy, or fear, often leading one to despair and prevent their destruction of efficiency, even to the point of exhaustion? The answer seems positively conclusive. First, correct the factors causing the difficulty if possible. Adopt the reparative measures of diversion, relaxation and restful sleep and also try to find a workable philosophy of life. The solution again is not in drugs unless, for example, there exist very suggestive or definitely proven deficiencies requiring specific treatment.

One should adopt diversion as early in life as possible and should develop hobbies and interests outside of required daily work for it is much more difficult to acquire and enjoy them later in life. One note of warning should be given here where physical exercise enters into your plan for diversion. Proper exercise is important, but consider first your physical condition, your age, or what you have been accustomed to doing in the past in this respect. Sudden changes to violent or prolonged exertion, with lack of fitness or training, may bring on physical discomfort, leave exhaustion or a prolonged reaction. This is only doing harm. For instance, too severe or prolonged physical strain, especially in middle aged or older people, is seen often to produce undue breathlessness, symptoms of oppression or distress in the chest or upper abdomen, thought to be indigestion, or cramps and pains in the legs. Any of these symptoms may lead to serious trouble if the strain continues. Certainly, such symptoms should lead you to consult your physician. Swallow your pride if necessary and admit to yourself, at least, that you cannot always continue to do the things which formerly you could easily do. Try to grow old gracefully. Take exercise but within the circle of your fitness and comfort.

Relaxation is a much more difficult problem, as pointed out in a reference to Dr. Jacobson's book on "You Must Relax": "There is more in relaxation than just making up your mind to it. Neither the doctor's orders or your own will power can impose relaxation on your body. There is a method which must be acquired for relaxation to be really effective." We gain relaxation only by real training and constant effort.

Here let me tell you the story of accomplishment in this direction by a man whom many of us have admired. I have known him for nearly twenty-five years and have seen him in many difficult situations which called for quick and calm thinking, yet never have I seen him ruffled or lose his serene and deliberate attitude. The effectiveness of his work tells the result. This man once told me that in his early active work he found himself worried, upset, disturbed, and tired by the difficulties of the day. He sat in his office chair after one of those days and reasoned out his philosophy of life in work. He recalled the advice of his old college professor, "Gentlemen, if you would live usefully and happily for yourself and others, if you would be a good citizen, follow a life of *sweet* reasonablness." From that time on, with effort and persistence, at first with difficulty, he developed an attitude, a control and poise, a relaxation at work that has been a model to follow. He has been in many difficult and responsible situations, had adversity and disappointments, yet never have I seen him lose his equanimity, his smile or his adopted philosophy of life.

You can attain relaxation in work or play, even in critical moments, by conscientious training and effort. Larry Kelly, the great football end at Yale, attributed his ability to catch forward passes to deliberately setting about, early in his football experience, to attain relaxation even in most tense

football struggles. Watch the professional baseball player to note with what grace and ease he takes a difficult assignment in the presence of a howling mob of fans intently watching him. On the other hand, I recall a football game where the captain of the team playing safety man in the backfield was so nervous and tensive that he dropped four successive punts which went directly into his arms.

How often we see the tired business man, seeking diversion and relaxation in golf, carrying his nerve tension, irritation and drive into his competitive game, destroying much of the value he fools himself into believing that he is getting, particularly that of relaxation. Likewise, how many women are piling up nerve fatigue through their too frequent, long, tensive and sometimes bitterly contested bridge games.

Too often you, as well as many others, fail to acquire real relaxation because you become so engrossed and keyed up by your work or play, your bridge games or other over-stimulating interests that you lose your perspective. What was originally planned as an accomplishment, a diversion or outlet, becomes a dragnet — or better, an octopus — to engulf you and absorb all your waking hours and nervous energy. This may be at the expense or neglect of other duties or interests which on serious thought you will realize you hold dear in life.

This urge, excitement and nervous drive, then, in reality, becomes close to a mania. This cannot go on indefinitely, otherwise sooner or later you begin to wonder why life is not going smoothly, why you fatigue so easily, cannot relax or sleep well and why you have headaches and indigestion.

If you keep before your mind the idea that the well balanced life is the strong and resourceful life and that it necessitates the proper proportions of rest, work, and play, you will, with thoughtful understanding, more moderation, real training in relaxation, and the development of a better poise, certainly help yourself to escape from the meshes of this dragnet or the strangling clutches of the octopus.

As for restful sleep—all the cells in your body, both nerve and others, need regular rest. Unless you give consideration to sleep and its reparative factors, to the storing up of energy and reserve for the next day, you are living contrary to nature. Repeated violation of this law of nature over a period of time will take its toll. You will be the one to pay the penalty. It is well to remember that rest is the most time honored and important remedy even today in dealing with functional as well as disease states.

I am not going to try to explain to you specific methods of attaining relaxation and sleep as it is my purpose only to try to point out factors that may be opposing them, with suggestions in the nature of readjustments in your life. Perhaps such readjustments alone will solve your problems. For those who wish or need more specific measures or training in how to relax and sleep well, I know of no better advice than that so ably presented by Dr. Edmund Jacobson in his two books: "You Must Relax" and "You Can Sleep Well."*

Finally let me urge all of you who have become more or less reckless spenders of your nervous energy *to pause* and *consider* what you are doing, where you are going, and how you are going to get there. *Then take stock* of your reserve forces. You may at any time, by necessity or real emergency, be called upon to use them. If they are depleted, you are quite apt to find yourself led insidiously into some unhappy dilemma. If the real facts were known how often could the lack of diversion, relaxation, and sleep be found responsible for domestic misunderstanding, divorce, accident, and tragedy. How often lack of courtesy, accidents, and deaths occur on our highways as well as in our industries and in fact all walks of life for the same reasons.

Mental hygiene and other agencies in this country are doing much in close association with medicine to help in this problem. I am sure the essence of this work is to teach and urge that each individual know himself, his weaknesses, his strengths, and set his sails for the kind of craft he is sailing and the type of water he is apt to meet. If he does this, finds his own workable philosophy in life and adds the proper proportions of diversion, relaxation, and sleep, and thereby acquires better poise, he will live not only a much longer and happier, but a more effective life.

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*"You Must Relax," priced $1.50, became the best seller in its class in 1934. The Journal of the American Medical Association speaks of it as "real help." The *Chicago Daily News* says, "The most important book of our time." "You Can Sleep Well," priced $2.00, was published in 1938 and is the result of thirty years of careful study and observation by the author. These books give you instruction in methods to conquer lack of relaxation and proper sleep. They are published by Whittlesly House, McGraw-Hill Company, Inc., 330 West 42nd Street, New York.



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VOLUNTARY HEALTH INSURANCE

A perfect plan for the prepayment of the costs of medical services incurred in severe illness would be a blessing to persons in the so-called "low-income group." Every practitioner knows the tragedy that sickness brings to the family whose income is barely able to cover its needs when all hands are well. A method of prepayment with a spreading of the costs of individual illness over a large group, in other words an insurance plan, which could be applied equally, which would in no way diminish the quality of the service furnished and whose application would not involve cumbersome and expensive machinery and would be proof against collusion and abuse — such a plan would be a blessing indeed.

A little study into the problem leads one to feel that to expect perfection in a plan for voluntary health insurance is like expecting to find perfection in human character or municipal government. That a workable plan may be found for any given community or state, a plan whose advantages might reasonably outweigh the obvious disadvantages and difficulties that must be involved, is certainly within the bounds of possibility. At the present time several hundred plans are being prepared and some are being tested by actual use throughout the country. This fact is an answer to those critics who have said that physicians are unwilling to endeavor to improve the methods of rendering professional service.

An attempt to carry out such a plan must be considered as a deliberate experiment on the part of the medical profession which sponsors it. Such an experiment in the delivery of medical care, in order to constitute a real step in advance, must conform to certain definite stipulations. These have been admirably stated by the Wisconsin Medical Society and may be summarized briefly as follows:—

(1) Service to patients must not be deliberately cheapened, even if the premium proves insufficient.

(2) Free choice of physician must be maintained.

(3) A hope of increased profit to the physician must not be a motivating force in the experiment, nor must extra services be involved for which the physician may collect extra fees.

(4) There must be no hope of profit for the organization promoting the experiment, but on the other hand the whole body of physicians who are to render the services must be solidly behind the undertaking and willing to carry it out even if the income from premiums turns out to be inadequate to pay for such services by any reasonable standard.

(5) The experiment must be begun on a small scale and abandoned promptly if it does not prove successful.

It is well to remember that there are a number of factors which must be carefully considered before such a plan is adopted. In the first place group hospitalization, which is about to be established in Rhode Island, is a means of lifting a large part of the burden of serious illness. Furthermore the insurance against loss of wages which has been suggested by the National Health Conference and approved by the medical profession, if adopted, will prove to be another unobjectionable method of lightening the load. If there is to be added to these two methods of relief further insurance covering all medical services and thus wiping out all the costs of illness, the tendency of a patient to be willing to remain on the sick list and the temptation to collusion with an unscrupulous physician are obvious. Another knotty problem is the difficulty or impossibility of calculating the risk of illness, which makes premium fixing a matter of mere guesswork. This is complicated by the fact that those in the "low income group" who will most eagerly seek insurance are those who feel that they are likely to need it — in

other words those who are poor risks. The method of evaluating risks, fixing and collecting premiums, making and enforcing regulations governing the work of the physicians under the plan may well involve so much cumbersome organization as to render the whole scheme top-heavy and unworkable. There is also the final consideration that in some countries, notably in Denmark, the establishment of voluntary insurance has led directly to general compulsory insurance with its inevitable degradation of medical service and bureaucratic and political control.

The Providence Medical Association is at present studying the possibility of the establishment of a Voluntary Health Insurance plan. In this study it will be necessary to consider the question of actual local need and of local demand, if any, for such a service. It is to be hoped that no attempt will be made to commit the Association and the Community to anything more than a small scale experiment which can be expanded if successful and which, to be successful, must have the backing and cooperation of the entire membership.

PROVIDENCE MEDICAL ASSOCIATION

Minutes of the April Meeting

The regular meeting of the Providence Medical Association was called to order by the President, Dr. Harry C. Messinger, on Monday, April 3, 1939, at 8:45 p. m. The minutes of the preceding meeting were read and approved.

The Secretary reported for the Standing Committee as follows:

1. That the Standing Committee recommended the endorsement by the Association of the Basic Science Law now before the General Assembly of the State.
2. That the Standing Committee recommended that the Providence Medical Association endorse House Bill 798 as proposed to the General Assembly by the Rhode Island Dental Society as being an Act for the strengthening and raising of the standards of regulation for dentistry.
3. That the Providence Medical Association adopt a resolution favoring an appropriation by the City of Providence to the City Health Department to carry on a program of tuberculosis prevention and treatment, and further, that copies of any such resolution be sent to the City Council upon adoption.

President Messinger announced the appointment of the following committees: To prepare the obituary of Dr. Clifford B. Colwell — Dr. A. H. Barnes and Dr. G. F. Conde. To prepare the obituary of Dr. Arthur H. Harrington—Drs. W. L. Munro and A. H. Ruggles. To prepare the obituary of Dr. Arthur T. Jones—Drs. A. H. Miller and F. V. Hussey.

The Secretary reported that the Standing committee recommended Dr. Michael Arciero and Dr. Peter F. Harrington for membership in the Association. On the motion of Dr. Muncy both these applicants were elected to membership.

Dr. William Muncy presented a resolution regarding the proposed Basic Science Law now before the General Assembly.

WHEREAS, the obligation of the medical profession is to safeguard the health of the citizens, and

WHEREAS the medical Profession of Rhode Island has always advanced legislation which is for the best interest of the people and their health,

THEREFORE, The Providence Medical Association, in meeting assembled, endorses fully the Basic Science Law proposed to the present General Assembly as an Act directed toward the better protection of the health of all in Rhode Island, and

FURTHER, urges that this Act be given full and favorable consideration by the Legislature in its present session.

The resolution was adopted as read.

Doctor John G. Walsh presented a resolution regarding the proposed dental legislation now before the General Assembly, as follows:

WHEREAS, the Rhode Island State Dental Society has proposed to the General Assembly of Rhode Island an Act in amendment of the General Laws for the regulation of the practice of Dentistry, and

WHEREAS, this Act, known as House Bill 798, would establish very rigid requirements for dentists and would thereby raise the standards of the dental profession even higher in this State,

THEREFORE, the Providence Medical Association, in meeting assembled, endorses such commendable legislation, and urges that the General Assembly of this State pass favorably on this measure at its present session.

The resolution was adopted as read.

Doctor William P. Buffum, on behalf of the Committee on Tuberculosis of the Association, presented the following resolution relative to the ap-

propriation of city funds to the Health Department to carry on a tuberculosis program:

WHEREAS, Tuberculosis is still the greatest cause of death among young adults, and

WHEREAS, It is well known that the tuberculosis death rate in a community can be definitely lowered by Health Department activities, including the control of those who are spreading the infection, and promoting the examination of those who have been in contact with active cases, and

WHEREAS the Providence Tuberculosis League, which has been doing tuberculosis control work for the City of Providence, will be forced to curtail its work on account of the lack of funds, and

WHEREAS it is generally recognized that tuberculosis control is a proper function of a City Health Department,

THEREFORE, The Providence Medical Association recommends that the City Council of the City of Providence appropriate funds to enable the City Health Department to establish a Department of Tuberculosis Control.

The resolution was adopted as read, and the motion passed that a copy of the resolution be sent to the Common Council of the City.

The President stated that at the suggestion of the Standing Committee a meeting of the president and the secretary of each of the district societies, together with the president and the secretary of the State Medical Society, would be held in the near future to discuss plans for closer cooperation between the various groups.

The business meeting being concluded, the President introduced Dr. Eske H. Windsberg, who presented the final report of the Committee on the Need and Supply of Medical Care, giving in full detail the results of the findings of the committee as the result of its six month study of the problem for the American Medical Association. The paper was discussed by Dr. A. Corvese.

Dr. J. Edwards Kerney presented the subject "Seminal Vesiculitis" which was discussed by Dr. Eric Stone and Dr. John Streker. The topic "Chronic Prostatitis" was presented by Dr. Howard K. Turner, and Dr. V. Oddo offered discussion afterwards.

The meeting was adjourned at 10:40 p. m. Attendance 81.

Respectfully submitted,

HERMAN A. LAWSON, M.D.,
Secretary.

Report of the Committee for the American Medical Association of the Need and Supply of Medical Care

FINAL REPORT COMPILED BY
ESKE H. WINDSBERG, M.D.
223 THAYER STREET, PROVIDENCE

During 1938 the Board of Trustees of the American Medical Association encouraged state and county medical societies throughout the country to collect information concerning medical needs, and to formulate preferable procedures to supply these needs in accordance with established policies and local conditions. For this purpose Doctor Alex M. Burgess, then President of the Providence Medical Association, appointed a committee to study the conditions in our district and to complete a survey. With the able assistance of our executive secretary a large mass of information was obtained from physicians, dentists, pharmacists, hospitals, nursing associations, health departments, colleges, schools, welfare and relief agencies in the cities of Providence and Cranston, and the towns of Barrington, Bristol, East Providence, North Providence, and Warren. The area embraced in the survey contains a population of 353,197 persons, 456 physicians, 224 dentists, 11 nursing agencies, four health departments, 34 welfare and relief agencies, 16 school organizations, and six colleges.

I. EXISTING FACILITIES FOR MEDICAL CARE.

In the area studied there is a doctor available to every 774 persons, a dentist to every 1576, and a nurse to every 500. For the country at large there is one doctor to about every 785 persons.

The nine hospitals in the area have a total of 1813 beds. Of these, 402 are in private rooms, 371 are in semi-private rooms, and 1040 are in wards of five or more beds each. Analyzed in another way, this total of 1813 beds is composed of 741 devoted to general medicine and surgery, 335 to maternity cases, 208 to children, 236 to nervous and mental patients, 57 to tuberculous, 65 to infectious, and 171 to other specialty patients. (Table) During 1937 the private beds enjoyed an occupancy of 22%, the semi-private beds 21%, and the ward beds 57%.

The daily rates for hospital care vary between $3.00 and $4.00 per day for ward bed, $4.00 and $6.00 per day for semi-private beds, and $5.00 and $10.00 per day for private bed occupancy.

Presented before the Providence Medical Association, April 3, 1939.

There are, in our area, 63 clinics, of which 52 are operated by hospitals, two by health departments, and nine by welfare and relief agencies.

Fifteen private agencies and two governmental agencies in this area arrange for or provide medical services for indigent and low income group patients. Six agencies embrace care in a physician's or dentist's office; six, medical care in the home; fourteen, hospitalization; eleven, the supply of drugs, eye glasses, and surgical appliances.

Fifteen school health services in this area supply health supervision to one hundred and fifty-six schools, embracing all the schools below the college level. Three health supervision services are under the control of boards of education, three under health departments, and nine under some other agency.

TABLE

TOTAL NUMBER OF HOSPITAL BEDS (*Providence District*)

For	*In Private Rooms (1 bed only)*	*In Semi-private rooms (2-4 beds)*	*In Wards (5 or more beds)*	*Total No. of Beds*
General Medicine and Surgery	48	109	584	741
Maternity (bassinets 249)	63	145	127	335
Children	68	38	102	208
Nervous and Mental	144	4	88	236
Tuberculosis	3	8	46	57
Infectious	24	17	24	65
All Others	52	50	69	171
Total	402	371	1040	1813
Occupancy	22%	21%	57%	

Preventive Medical Services

One hundred and ten, or 57% of the 191 physicians reporting, performed preventive medical services in private practice. Ten did such work for health departments, and fifteen for other agencies. All children who entered school for the first time in 1937 were successfully vaccinated against smallpox. Of each 1000 children born alive during 1937, 250 were immunized against diphtheria by the City Health Department of Providence alone. 95% of all children are immunized before entering school.

Only 0.8% of all births were unattended by either a physician or a midwife. Of the total number of obstetric patients reported, 40% waited until after the third month of pregnancy to consult their physicians.

II. FREE AND PART-PAY MEDICAL CARE

The facts and statistics presented up to this point embrace a more or less composite picture of all the facilities for medical care which exist in our community and its immediate environs, and relate to the services available to all income groups. We now present data referable specifically to medical care available and given to the free and part pay income groups. This data is for the year 1937.

In the home, office, or hospital, 191 physicians reported rendering of free service to 16,286 persons, an average of 85 for each physician. The 55 reporting dentists gave such free service to 1689 persons. In outpatient departments, to free ambulatory patents, physicians devoted 31,022 hours, dentists, 2,053 hours. In addition, 23,734 visits for free or part-pay dental care were handled at the Joseph Samuels Dental Clinic during the year.

In the hospitals, 12,980 patients were classed as part-pay, 258 as public charges, and 11,588 as free patients. Of the 486,440, total patient days of hospital care given during 1937, in the nine hospitals in the area, approximately 46% were given to pay and part-pay patients, 2% to public charges, and 52% to free patients. In outpatient departments 43,661 patients were seen, enveloping a total of 204,875 visits. Seventy-five per cent of a total of 196,686 nursing visits were made without charge to the patients. In many instances pharmacists compounded prescriptions free of charge and also at cost or for reduced fees. The annual reports of the Providence City Health Department and of the State Unemployment Relief Commission indicate that adequate arrangements exist in the area included in this study for the provision of medicines to the indigent.

Standards or Procedure Used to Determine Inability of Patients to Pay for Medical Services

Definite standards and procedures exist to determine the inability of patients to pay for medical services. One general hospital requires that recommendation be made by a physician, and the patient's status gone into thoroughly by an admitting physician and a social service worker in the admitting office. A second general hospital makes its determination through a social service department. A third general hospital states that it delves into the earning capacity of members of the family, the

size of the family, its living and economic conditions, and also considers the recommendation of the referring physician. The fourth general hospital in this area states that all patients are social serviced. As a general rule patients from a family of three, with a weekly income of twenty-one dollars or less, where the wage earner is not the patient, and those from families of five with a weekly income of thirty dollars or less, are usually considered clinic cases. Exceptions are made, but this is a gauge to go by. People having incomes above these are informed that they must consult their family physician in his office.

Sources of Funds

In surveying the scope of free and part-pay medical care, the sources of funds for the payment of medical care for the indigent, other than payments made by patients themselves, were determined.

Sixteen agencies reported that they received either city of county aid; four, State aid; one United States government aid; fifteen, aid from Community Chest funds; eleven, funds from philanthropic agencies; fourteen; individual donations; four, from student's fees; and one reported receiving aid from college funds.

III. Need for Medical Care

Hospitals and Agencies

There were very few cases which needed hospital care but were not admitted as bed patients. At St. Joseph's Hospital none were refused admission. At the Rhode Island hospital chronically ill patients were not admitted. At the Homeopathic hospital a few were refused because their financial condition indicated an ability to consult a private physician in his office. At the Miriam hospital ward beds are occupied most of the time and occasionally applicants for ward beds, (other than emergency cases), were placed on the waiting list. At the Lying-In hospital patients were refused only when investigation showed that the patient was able to afford a private physician. The Charles V. Chapin hospital, a municipal hospital, refuses no Providence resident admission or treatment because of lack of ability to pay for services. At Butler hospital a number of senile patients could not be admitted because of the lack of suitable accommodations. At the Osteopathic hospital twenty-five patients were refused admission because of the lack of accommodation. At the Bradley Home for children none were refused.

It is apparent that a few patients, for one reason or another, were not admitted to the hospital to which they first applied. It does not follow that no hospital admitted them. The likelihood is that some hospitals did, in most instances, accept them. However, there is indicated a definite lack of proper accommodations for the elderly mental cases and for the chronically ill.

During 1937, likewise, there were very few patients needing medical services who were turned away from outpatient departments. The reasons given for turning any away were first, that the patients were not recommended by a physician, and second, that the patients could afford the services of private physicians.

Thirty-six patients were reported as having been visited by nurses, during 1937, who were not receiving medical care. One of these endeavored to secure medical service but was unable to. In this case it was due to the person's unwillingness to pay a physician's bill of many years standing. In the other 35 instances no attempt was made to secure medical services. It would appear that no one, regardless of ability to pay, need go without necessary medical care except through ignorance or unwillingness to accept medical care.

The Health Department rendered 8,808 visits for medical care in the home during 1937. Not a single instance was reported where medical care could not be obtained when services were requested from the Health Department. Very few cases were reported to the department as in need of medical care and not receiving it. Service was always available and the only reason for these few not receiving medical care was the refusal of the individual in each instance to accept treatment. Ten mental cases in need of medical care, but not desiring it, were given care just the same.

Welfare and relief agencies reported very few cases as needing medical care which could not be furnished or obtained. Difficulties encountered for those who desired service were limited to dental care. It is impossible to estimate the number of persons who needed but did not receive dental care during 1937. With respect to needed medical or hospital care the chief general difficulty encountered was the resistance on the part of some families and individuals to accept free care, due to the impression that such care is not as reliable as private care. The Family Welfare Society reported that it was able to arrange for all the needed medical and

hospital care of families or individuals known to its organization, during 1937, with the exception of dental care for adults. The Providence Tuberculosis League reported that any failure to secure needed care was due to refusal of the patient to accept it.

Schools and Colleges

In the elementary and secondary schools, during 1937, it is doubtful that any pupil in need of medical care could not obtain it. In general, failure to obtain care was due to negligence in following the recommendations after examination. The majority of the difficulties here, too, revolved about dental care. In the Department of Public Schools of Providence the program of health and physical education and health service is beyond doubt entirely adequate, thorough, efficient, and comprehensive.

Dental service is limited to children of the kindergarten and the first three grades, whose parents make signed statements of inability to pay a private dentist and request free services. Emergency dental service is given to any school child suffering toothache at any hour of any clinic session on signed parental request. Clinics are conducted each morning of every school day.

In the universities and colleges not a single case was reported as being unable to obtain needed medical care.

Physicians and Dentists

During 1937 eleven physicians and seven dentists, answering our survey, reported instances where services could not be obtained.

IV. Comments and Suggestions

Comments were invited from physicians and dentists, and from the various agencies, concerning the need for medical services and the methods considered necessary to supply these needs.

The replies from PHYSICIANS in this regard are summarized as follows:

I.	Total number of physicians to whom form was sent	456
II.	Total number of Physicians who returned forms (42%)	191
III.	Total number of Physicians who offered comments (80% or 191)	153
A.	1. Present system and facilities satisfactory and adequate	48
	2. Chronically ill inadequately cared for	4
	3. Group Hospitalization advocated	7
	4. Plan for Low Income Group	2
	5. Small communities lack proper arrangements	9
	6. General economic factors stressed	23
		—(112)
B.	Clinics and free care abused	28
		— (28)
C.	Drastic changes and suggestions	13
		— (13)

Verbatim comments representative of the various groups in the above table are as follows:

"To my knowledge the public is well cared for by the medical agencies, and any change might become a detriment to the public health and the medical profession."

"I believe that the medical profession is doing a good job at the present time in taking care of the public; they sift out the cases, and it is a matter of honor that require special duty or examination get just that. Most cases are trivial but the layman doesn't think so, and if the decision rested with the public the cost of taking care of them would be huge, and worst of all, unnecessary. There couldn't be hospitals enough because every patient would decide for himself that he required hospital care."

"Present organization of medical care in this community is adequate providing that the institutions now giving the care receive adequate financial support so that they do not have to curtail their work."

"Those who suffer for lack of care in illness here in Providence do so largely through their own ignorance or carelessness. I believe a well-handled insurance plan for hospitalization would be most wise and helpful."

"In Rhode Island the need for proper care of the chronic indigent cases of sickness is present. Probably will be solved some day when a suitable institution is erected."

"I believe that there are sufficient hospital facilities in this state to care for all who need it, if the communities without hospital facilities would recognize their obligation to the indigent and make appropriations to recompense hospitals in adjoining communities."

"The present plan of medical services is very satisfactory. Agencies should lay more stress on food, shelter, clothing, etc., than they do on medical care. I have seen many instances where a family with a goodly supply of cough medicines, cod liver oil, etc. (obtained through relief agencies), with very little food, coal, etc. (refused by these same

agencies). My motto, 'Give them food, clothing, and shelter and let our present medical plan as it is!' "

"Medical services are adequate. Industry is not adequate to provide sufficient wages to individuals as breadwinners to eliminate the prime cause of illness, which is mal-nutrition."

"I feel that lower income groups do not get the proper medical attention; while they are seen medically, the cost of giving adequate care is beyond that of most clinics. Some effort should be made to raise this. I also believe that physicians should be compensated for their clinic time, and in this way the needy physician would be able to maintain a proper standard of living and to advance his own medical education. Who will pay for all this I do not know. One assumes that it will be the government, which means in the last analysis that it is the people."

"Over 40 years in practice. Present system is wrong and always has been, and it's the doctor's own fault. Had he insisted 50 or 100 years ago upon being paid for his services, like everyone else, at the hospitals, whether by state or city, or in any way so the tax would be equally divided by all, we would not find ourselves now in this position."

Dentists

Of the 224 dentists to whom questionnaires were sent, 55 made returns; of these latter, comments were made by 26. Comments fairly representative of this group are as follows:

"There is a definite need for dental attention — both preventive and restorative. The general public probably could be better served by standardization of fees, a dental group plan controlled by the American Dental Association, a listing of practitioners who are willing to work at a reduced fee for special cases referred by a government or private relief agency. All dentists allowed to enlist their services."

Hospitals, Nursing Agencies, Health Departments

1. "We believe that there is adequate care for all indigent persons in our community, but that public funds should be made available to private charitable hospitals for the care of the indigent. Under the present set-up, public funds are not adequate to care for all, and persons on part time work, WPA, etc., considered as employed, are not eligible for hospital assistance in case of illness of members of their families. In addition, the $2 per day allowed by the community relief agencies is a meager part payment to the hospitals for care of patients whom they do approve for aid." (From a general hospital)

2. "I cannot believe that anyone in this community fails to receive needed care. I do feel that many receive free care who might well pay a private physician. I think the hospital owes it to the physician to spend money in investigation of applicants for free care, even for care in the out-patient departments." (From a maternity hospital)

3. "There is difficulty in getting hospital care for sick poor of the town in the city hospitals. An appropriation from the town to the hospitals would be the answer." (Barrington district Nursing Association.)

Several agencies voice the lack of dental care, and state that clinic service is not available for children over twelve years of age. From a nursing agency comes a plea for more preventive medical measures, with the hope that periodic health examinations may be given to every person, and thus many major illnesses checked. A child guidance clinic reports "a need for additional child guidance clinics and child psychiatric care, both clinical and institutional, on a free basis." Private funds, they feel, can meet these needs only partially.

One agency complains of the lack of preventive medicine among the needy; the low wages of the employed members of the families prevent the purchase of oils and other expensive medications for the children. A private school states; "Believe the City Health Departments should supervise an annual physical examination of every school student, parochial, private, and public."

Summary

The statistical report and the comments from all sources bear witness to the very full facilities for medical care which exist in this district. Since no part of the state is more than fifteen miles from a city, and because of our excellent roads and efficient means of transportation, these facilities should be within the reach of all people who require and desire professional care. In Providence the indigent are well provided for by the numerous and varied relief facilities, clinics, and charitable organizations, in addition to the free services of practically every physician and dentist. However, it seems that there is a definite need for a well-defined program of education regarding the existing agencies for free care. The people should be taught to

seek medical care in the early stages of illness; they require instruction in the methods of contacting the proper agencies without wasting, often, a great deal of valuable time. In addition, a stronger control by the Medical Society over the health and welfare agencies which direct patients to clinics seems indicated, in order to prevent the abuse of free facilities by persons who can well afford private care, and to prevent duplication of effort.

Many of the smaller communities surrounding Providence have failed to appropriate sufficient funds for the medical care of their indigent. This defect was alluded to in the numerous comments that were sent in. The privately endowed hospitals of Providence have experienced a great reduction in their income in recent years and have had to refuse the use of their facilities to the indigent who are non-resident. The institutions now giving the care in our district should receive adequate financial support, either from private or from public funds, so that they will not have to continue this policy.

From many sources—from dentists, physicians, nursing services, and relief agencies—attention is focussed on the lack of full facilities for dental care in adults and in children above the age of twelve years, among the indigent. Likewise, from many sources, attention is called to the need of proper facilities for the hospitalization of chronic cases and senile patients. When we view the trend of our vital statistics over the past 35 years it is evident that there has been a steady increase in the per cent of persons over 60 years of age in our population. This increase is due to continue and to create new problems in the care of the elderly and the chronic. Dr. Walter B. Cannon, in his William Henry Welch lecture "Homeostasis in Senescence,"[1] recognized this phenomenon and saw a possible solution when he stated, "New problems are sure to arise with these changes of age distribution. The burden of old age benefits will increase. The reserves for old age security will have to be amplified. More accommodations for the senile, the blind and the bedridden must be provided. Associated with these extra demands there may be (necessary) fewer accommodations for children—a lessened expenditure for child welfare, for schools, and for hospitals for infectious diseases. Perhaps as these alterations occur there may be greater attention to geriatrics and less to pediatrics." In short, the problem of providing proper care for the chronic and the senile is with us, and, recognizing the problem, there is little doubt but that this Society will exert its efforts toward a speedy solution.

All the sources of information which this survey reached attest to the fact that economic distress has been, and is, a most important element in creating the need for and obstructing the supply of medical care. "Give the people steady employment, give them adequate wages, and they will solve their own problems," is an oft repeated comment. Currently, the United States Public Health Service[2] notes that the pneumonia case rate among relief families is more than twice that in the upper income brackets. This is a fact that every physician and welfare worker can amplify a hundredfold, with respect to most of the other maladies known to mankind. *Adequate food, clothing, and shelter* beckon the medical profession to champion them as compelling weapons of preventive medicine, and cannot be denied. They deserve emphasis today just as the Pasteurization of milk, a pure water supply, and proper sewage disposal did in the recent past. How futile, then, the cry for compulsory health insurance with its attendant evils of medico-political bureaucracy!

Thus the problem of the low income group becomes understandable Our first duty is to insist that what they, like the indigent, need more than anything else is the ways and means necessary to prevent morbidity. All too often problems created by dislocation of industrial finance and by political meddling with economic forces are thrown at the doorstep of medicine. Nevertheless, the need for distributing more evenly the burden of proper medical care among the low income group is recognized. Some plan to meet this need is recommended by many physicians and dentists. Any plan which is adopted, they most invariably urge, like the Group Hospital Plan, shall be on a voluntary basis and under the essential control of the medical profession.

Eske H. Windsberg, M.D., *Chairman*
Frank W. Dimmitt, M.D.
Frank B. Littlefield, M.D.
Harry C. Messinger, M.D., *ex-officio*

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1. *Cannon, Walter B.*—N. Mount Sinai Hosp. 5:598 (Jan.) 1939.

2. U. S. Public Health Service Reports.

PAWTUCKET MEDICAL ASSOCIATION

Minutes of the April Meeting

A regular meeting of the Pawtucket Medical Association was held at the Nurses' Auditorium of the Memorial Hospital on April 20, 1939. The meeting was called to order by the President, Dr. Thad A. Krolicki. Thirty members and four guests were present.

There was considerable discussion concerning the advisability of having all members of the local association become members of the State Society. An opinion was expressed that the local society would be very lax if an effort was not made to have one hundred per cent membership in the State Society.

A paper was presented by Drs. J. E. Greenstein and R. E. Stevens on "The Treatment of a Series of Twenty-five Cases of Pneumonia at the Memorial Hospital with Sulfapyridine."

A set of resolutions were presented on the death of Dr. Byron U. Richards.

The meeting adjourned at 11:10 P. M. Collation was served.

Respectfully submitted,

JOHN H. GORDON, M.D.,
Secretary.

CHARLES V. CHAPIN HOSPITAL

Dr. Roger J. Forastiere left April 15 to accept a two-year residency in anesthesia at Bellevue Hospital, New York, He had served as resident since November 1, 1938 and for six months previous had been an intern at the Charles V. Chapin Hospital. The vacancy was filled by Dr. Robert W. Drew who had commenced an internship on the first of February. Dr. Drew was formerly at the Rhode Island Hospital.

Dr. Martin Glynn of Brooklyn, New York, who was graduated from Long Island College of Medicine in 1935, started a three-month service on April 1.

A six-month service was started on April 1 by Dr. Raymond E. Moore. He had previously been at the Rhode Island Hospital and is a graduate of Tufts Medical School.

Dr. Irving Blazar of Providence started a service of three months on April 3. He is a graduate of the University of Berlin, and was formerly an intern at the Homeopathic Hospital, Wilmington, Delaware.

RHODE ISLAND HOSPITAL

SCHEDULE FOR MAY, 1939

MONDAYS:
- Thoracic Clinic, 4:30 P. M.
- Surgical Conference, 12 Noon, May 8, 22nd.

TUESDAYS:
- Gastro-Intestinal Clinic, 9:30 A. M.
- Path. Conference, 12 Noon, May 9, 23rd.

WEDNESDAYS:
- Tumor Clinic, 10:00 A. M.
- Nurses Graduation, May 17th, 8:30 P. M.

THURSDAYS:
- Orthopedic Grand Rounds, 9:00 A. M.
- Thoracic Clinic, 11:30 A. M.
- Gyn. Staff Meeting, 8:30 P. M., May 4th.
- G. U. Staff Meeting, 8:00 P. M., May 25th.

FRIDAYS:
- Fracture Rounds, 11:00 A. M.
- Pediatric Grand Rounds, 11:00 A. M., May 5th, 19th.
- Heart Conference, 11:30 A. M.
- Surgical Staff Meeting, 8:00 P. M., May 5th.

SATURDAYS:
- Neurological Grand Rounds, 9:00 A. M.
- Medical Conference, 10:00 A. M.

On March 15th, Dr. John Weston, of Seattle, Washington, began a two years internship at the Rhode Island Hospital. Dr. Weston received a B.S. degree from the University of Washington and a M.D. degree from Harvard. He spent six months as intern at the Seaphimer Hospital in Stockholm, Sweden. Dr. Weston is married, his wife and son living in Ardmore, Penn.

On April 15th, Dr. B. A. Galuszka, of Chicopee Falls, Mass., who graduated from Tufts College and Tufts Medical School, began a two years internship at the Rhode Island Hospital.

On March 31st, Dr. Raymond E. Moore's internship terminated at the Rhode Island Hospital. On April 1st, he entered the Charles V Chapin Hospital for a six months internship.

RHODE ISLAND RECORD LIBRARIANS' ASSOCIATION

The regular meeting of the Rhode Island Record Librarians' Association was held at 3:30 P. M. on Thursday, March 30, 1939, at the Rhode Island Medical Library. Dr. William H. Foley, of Providence, gave an interesting talk on the "Legal Aspect of the Medical Record."

MARY NUNEZ, *Secretary*

RHODE ISLAND SOCIETY FOR NEUROLOGY AND PSYCHIATRY

The February Meeting of the Rhode Island Society for Neurology and Psychiatry was held at the John M. Peters House, Rhode Island Hospital, on Monday evening, February 13, 1939. The meeting was called to order by the President, Dr. Walter C. Weigner, at 8:35 P. M. The minutes of the last meeting were read and approved. The secretary reported for the standing committee, recommending the application of Dr. Kathryn L. Schultz for Membership. It was moved and seconded that her application be granted. It was so voted.

The standing committee recommended the election of the following as honorary members according to paragraph "C" of section IV of the constitution: Arthur P. Noyes, Harold Corson, L. A. Dalrymple, G. A. Elliott, G. M. Lott, Karl B. Sturges, Paul Everhardt, Philip Solomon, H. O. Colomb. Following discussion, it was moved and voted that these be honorary members.

The first scientific paper of the evening was presented by Dr. H. Houston Merritt of Boston, "The Diagnosis and Treatment of Epilepsy." The second paper was presented by Dr. Frances Cottington of Boston, "The Present Status of Metrozol in the Treatment of Mental Disease."

In the discussion Dr. Basil Bennett mentioned some new difficulties in the use of metrozol and presented films showing bone pathology principally in the bodies of the thoracic vertebrae. Dr. Philip Batchelder discussed these films. After further remarks the discussion was closed by Dr. Merritt and Dr. Cottington.

Meeting adjourned at 11:10 P. M.

NILES WESTCOTT, *Secretary*

RING SANATORIUM AND HOSPITAL

The Ring Sanatorium and Hospital, in Arlington Heights, has announced the appointment of Dr. Curtis T. Prout, as Medical Director to succeed Dr. Hosea W. McAdoo, who will enter practice in the South. Dr. Prout has had a broad experience in neuropsychiatry, having recently been associated as Senior Psychiatrist at the Neuropsychiatric Institute and Hospital, at Hartford, Connecticut. Former affiliations include the Henry Ford Hospital, Detroit, Michigan, and the Mayo Foundation, Rochester, Minnesota. He has served on the teaching staff at Cornell, Albany, and Columbia University Medical Schools. He has written numerous articles on various subjects related to his special field of medicine.

Dr. Prout is a graduate of Cornell, 1924, where he was a member of the Nu Sigma Nu medical fraternity. He was granted the degree of Master of Science, in Neurology, by the school of medicine at the University of Minnesota, in 1929, and was certified by the American Board in Neurology and Psychiatry in 1935. He is a fellow of the American Medical Association, American Psychiatric Association, American College of Physicians (associate); a member of the Association of the Residents and Ex-Residents of the Mayo Foundation, New England Society of Psychiatry, New England Society of Physical Medicine, Connecticut State Medical Society, Connecticut Society of Psychiatry, Hartford County Society, and the Boston Society of Neurology and Psychiatry.

AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY

The American Congress on Obstetrics and Gynecology is sponsored by the American Committee on Maternal Welfare. This Committee is composed of member organizations with a representative from each, forming the Board. The member organizations include the various national and sectional obstetrical and gynecology associations, hospital associations, public health organizations, and nursing associations.

The Central Association on Obstetrics and Gynecology proposed an American Congress on Obstetrics and Gynecology to study the present day problems on obstetrics and gynecology and their solution. The American Committee on Maternal Welfare was asked to sponsor this Congress. The Congress will be held in Cleveland, Ohio, September 11-15, 1939. The Committee expresses the purpose of the Congress, "To present a program of our present-day medical, nursing, and health problems, from a scientific, practical, educational, and economic viewpoint as far as they relate to human reproduction and maternal and neonatal care." This Congress is not in any sense a legislative body and naturally will take no action relative to maternal and infant care.

There will be sessions for each professional group in the morning with round table discussions. The afternoon meetings will have papers of general

interest to all members attending the Congress. The public will be invited to the evening sessions where there will be speakers of national prominence.

The program for the physicians will include among many others such subjects as pregnancy associated with: thyroid disease, heart disease, diabetes, tuberculosis, nutritional factors, carcinoma of the female genitive tract, and abortions.

The Congress is not planned as a meeting for specialists in any sense of the word but for all physicians who are interested in the problem of maternal and child welfare. Your Committee recommends this Congress as a week of postgraduate work which should be worth while much more to the physician than the time and expense incurred for the trip. The physicians of this state should be well represented at this Congress.

The membership fee of $5.00 includes membership in The American Committee on Maternal Welfare and registration in The American Congress on Obstetrics and Gynecology. Application blanks and further information may be secured from your chairman, or from The American Congress on Obstetrics and Gynecology, 650 Rush Street, Chicago, Illinois. Dr. Francis V. Corrigan, 610 Angell Street, Providence, is the Rhode Island State Chairman.

LOCAL EVENTS

February 28, Dr. Clifton B. Leech addressed the Malpighi Medical Club on "Questions and Answers on Diseases of the Heart."

March 20, Dr. F. Ronchese entertained the 34 Medical Club and read a paper on "Turban Tumors."

April 10, An open meeting of the Rhode Island Society for Neurology and Psychiatry was held in the Rhode Island Hospital Auditorium. The Program:—"Relationship of Vitamin Deficiencies to Neurological and Psychiatric Problems" Edwin F. Gildea, M.D., Associate Professor of Psychiatry and Mental Hygiene Yale Medical School.

"Symptomatic Psychoses with Special Reference to Bromide Intoxications" Paul W. Preu, M.D., Assistant Professor of Psychiatry and Mental Hygiene, Yale Medical School.

April 13, At the regular meeting of the Staff Association of Saint Joseph's Hospital, Dr. Albert H. Jackvony presented a case of "Posterior Perineal Hernia," discussed by Drs. A. W. Mahoney, Frank E. McEvoy and William R. McGuirk.

April 14, The W. W. Keen Medical Club was entertained by Dr. Elihu S. Wing. Dr. Clarence E. Bird presented "Stephen Hales:—An 18th Century Biography."

April 21, Dr. Dennett L. Richardson entertained the Friday Night Medical Club and read a paper on "Contagious Disease Hospitals."

April 25, At the meeting of the General Staff of the Homeopathic Hospital of Rhode Island, Dr. Irving Walker presented "Some Aspects of the Appendicitis Problem."

April 27, The regular Quarterly Meeting of the Rhode Island Medico-legal Society was held at the Board of Health Laboratory in the State Office Building. C. Wallace Bohrer, State Toxicologist, demonstrated "Laboratory Procedure in Scientific Crime Detection." Following adjournment supper was served at the Medical Library Building.

OBITUARY

GEORGE HAZARD CROOKER, M.D.

Doctor George Hazard Crooker died at his home, 101 Benefit Street, in his 74th year, on January 12, 1939. He had been in ill health for two years, but seriously ill since January first.

Doctor Crooker was born in Providence, February 25, 1865, the son of Josiah Whipple and Eliza Hazard Crooker. He obtained his elementary education at the old Mowry and Goff School, entered Brown University in 1883, receiving his A.B. degree in 1887, and his Master of Arts degree in 1890. While in college he played baseball and was active in the tennis and bicycle clubs. He was also a member of Hammer and Tongs dramatic society, and of Beta Theta Pi fraternity.

Doctor Crooker attended Harvard University Medical School from which he obtained his medical degree in 1893. He did post graduate work during the summer of 1890-91 in Vienna, Berlin, Dresden, and Heidelberg, returning to this country to continue his graduate study in 1892-93. He served his internship at Dresden Hospital and was a resident at Asabone Hospital in Dresden. He also served as an interne in the Providence Lying-In Hospital from 1895-97. He was licensed to practice in Rhode Island in 1895. He served on the staff of the Rhode Island Hospital in the Out-Patient Department from December, 1899, to October, 1905.

He practiced medicine for forty years in Rhode Island. He also had a military record as follows:

From 1896-1899 he did outstanding service as First Lieutenant and then Captain of the Rhode Island Hospital Corps in the Spanish-American War. During the World War he was a military medical examiner.

On May 4, 1918, Doctor Crooker was married to Harriet E. Phillips, who survives him.

Doctor Crooker was a member of the Providence Medical Association, the American Medical Association, the American Association for the Advancement of Science, the Association of Military Surgeons, and the Military Service Institute. In the Providence Medical Association he was at one time Chairman of the section on medicine and a member of the House of Delegates.

His social organization affiliations were the Providence Art Club, University Club, Squantum Association, and formerly, the Hope Club. He also was a member of the Harvard and Brown Clubs, the Society of Colonial Wars, Sons of the American Revolution, and the Rhode Island Historical Society. He was also a director of the Industrial Safe Deposit Company, and an active member of St. John's Cathedral parish.

John M. Peters, M.D.
Bertram H. Buxton, M.D

RICHARD P. BOUCHER, M.D.

Dr. Richard P. Boucher died on Christmas morning at his home on Academy Avenue. Born at East Windsor, Connecticut, on April 9, 1870, he was the son of John and Mary Boucher, who gave five sons to the professions, two to dentistry and three to medicine. After graduation from the Broad Brook School in Connecticut he attended Baltimore Medical School, now the University of Maryland, where he received his M.D. degree in 1896.

For forty-two years Dr. Boucher practiced in the Mount Pleasant section where he enjoyed an enviable reputation as an able, conscientious, and reliable physician whose extensive circle of patients benefited by the great kindliness which was an outstanding characteristic of his professional as well as his family life.

Dr. Boucher was a member of the staff of St. Joseph's Hospital and had been for many years attending physician at the Infant Asylum of St. Vincent dePaul. He was a surgeon with the rank of Major in the old Second Regiment of Rhode Island, a member of the Providence Medical Association, the Rhode Island Medical Society, and the American Medical Association. He also held membership in the Benevolent and Protective Order of Elks, the Knights of the Maccabees, the Holy Name Society, and the American Irish Historical Society.

Dr. Boucher is survived by his widow, Mary F. (Padien) Boucher, a son, Richard P. Boucher, Jr., and three daughters, Marie Boucher Norton, Catherine Boucher, and Helen Boucher McKenna. To his family, in their great bereavement, our Association offers sincere sympathy in the loss of a devoted and loving husband and father.

Whereas, it has pleased Almighty God in his Providence to remove from our midst our friend and associate, Richard Patrick Boucher, and

Whereas, we mourn his loss and cherish the memory of his friendship,

Resolved, that we this day record our sorrow and express our appreciation of his long membership in this Association; of his ability, conscientiousness, and kindliness as a physician; of his devotion to his family and those who were honored with his friendship; and further be it

Resolved, that these resolutions be spread upon the records of this Association and that a copy be prepared and furnished his family with the sincere sympathy of the Association.

Michael B. Milan, M.D.
Thomas W. Grzebien, M.D.

BOOK REVIEW

Clinical Gastroenterology. By Horace Wendell Soper, M.D., F. A. C. P. pp. 314, with 212 illustrations. Cloth, $6.00. The C. V. Mosby Company, St. Louis, 1939.

The general Practitioner may spend some time with this book to his advantage. It covers the subject in short, pithy chapters, in clear, easily understood language giving much good advice as to diagnosis and the author's methods of treatment. The chapter on milk is subject to debate but, perhaps, it is a good idea to start again discussion on the subject in the minds of all physicians. The illustrations are unusually clear and add much to the value of the book.

Frank A. Cummings, M.D.

The Vaginal Diaphragm. Its Fitting and Use in Contraceptive Technique. By Le Mon Clark, M.S., M. D., pp. 107, with 53 illustrations. Cloth, $2.00. The C. V. Mosby Company, St. Louis, 1939.

Doctors, I Salute! By Emilie Conklin, pp. 92. Cloth, $ ..... Light and Life Press, Winona Lake, Indiana, 1938.



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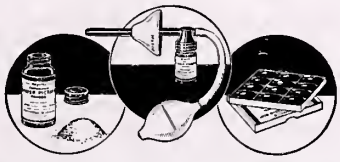
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   A.

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Maltose	*23.2%*
Dextrose	*16.0%*
Sucrose	*6.0%*
Invert sugar	*4.0%*
Minerals	*0.8%*

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2. **Q.** What are the properties of Karo?

   A. *Uniform composition.*
   Well tolerated.
   Readily digested.
   Non-fermentable.
   Chemically dependable.
   Bacteriologically safe.
   Hypo-allergenic.
   Economical.

3. **Q.** What are the Karo equivalents?

   A.

1 oz. vol.	*40 grams*
	120 cals.
1 oz. wt.	*28 grams*
	90 cals.
1 teaspoon	*15 cals.*
1 tablespoon	*60 cals.*



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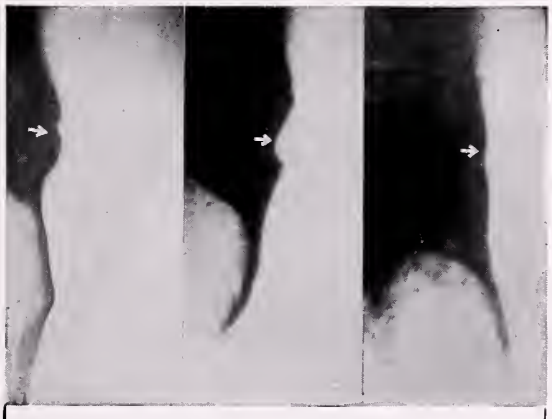
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CASE I—FEMALE, 74

Uncomplicated gastric ulcer first demonstrated by Roentgen rays in 1934. Diet and alkalies afforded little relief. Accompanied by loss of weight. Repeated X-ray studies in 1936 and 1937 showed no improvement. She was placed on a diet-gelatine regime in November, 1937. Relief immediate. Gained weight. Roentgen studies in April, 1938 showed no demonstrable ulcer.

CLINICAL research has recently demonstrated the effectiveness of utilizing plain Knox Gelatine (U.S.P.) in treatment of peptic ulcer. In a group of 40 patients studied, 36 (or 90%) were symptomatically improved; 28 of these (or 70%) experienced *immediate relief of all symptoms.* Other than dietary regulation which included frequent feedings of plain Knox Gelatine no medication was given except an occasional cathartic.

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This regime thus eliminates the "alkalosis hazard" attendant upon continued alkali therapy. In discussing the mode of action by which gelatine brings peptic ulcer relief, Windwer and Matzner* speak of the acid-binding properties by which proteins can neutralize acids, and they state that the frequent gelatine feedings "apparently caused more prolonged neutralization of the gastric juice."

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Empty one envelope Knox Gelatine in a glass three-quarters filled with cold water or milk. Let gelatine settle to the bottom of the glass, then stir briskly and drink immediately. Take hourly between feedings for seven doses a day.

*Windwer and Matzner, *Am. Jl. Dig. Dis.* 5:743, 1939.

NOTE: The gelatine used in this study was plain Knox Gelatine (U.S.P) which assays 85% protein and which should not be confused either with inferior grades of gelatine or with sugar-laden dessert powders, for these latter products will not achieve the desired effects. When you desire pure U.S.P. Gelatine, be sure to specify KNOX. Your hospital can get it on order.

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PROVIDENCE, MARCH, 1939

The increase in the number of whooping cough cases reported for the month of March is largely due to the fact that many of these cases had not been reported as definite cases of whooping cough until this month when, during routine investigation of the cases, the diagnoses were ascertained. Another reason for the delay in diagnosis and recording is that reports of cases very often reach this office from sources other than the physician who originally had seen the case. The cooperation of physicians is requested. They are asked to report cases as soon as possible after diagnosis.

**Vital Statistics*

Deaths all	317
Deaths under 1	13
Deaths over 70	114
Births	502
Marriages	48
Infant Mortality	25.90
Death Rate	15.35
Birth Rate	24.32

Principal Causes

1. Heart Disease	95
2. Cancer	41
3. Pneumonia	32
4. Nephritis	18
5. Cerebral Hemorrhage	15
6. Auto Accidents	5

Communicable Diseases	*Cases*	**Deaths*
Diphtheria	1	0
Scarlet Fever	40	0
Measles	38	0
Whooping Cough	358	2
Pulmonary Tuberculosis		4
Epidemic C-S Meningitis	0	0
Septic Sore Throat	19	1
Typhoid Fever	0	0
Bacillary Dysentery & Gast. Ent.	0	0

*Includes non-residents.

MICHAEL J. NESTOR, M.D.
Superintendent of Health

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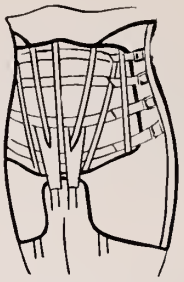
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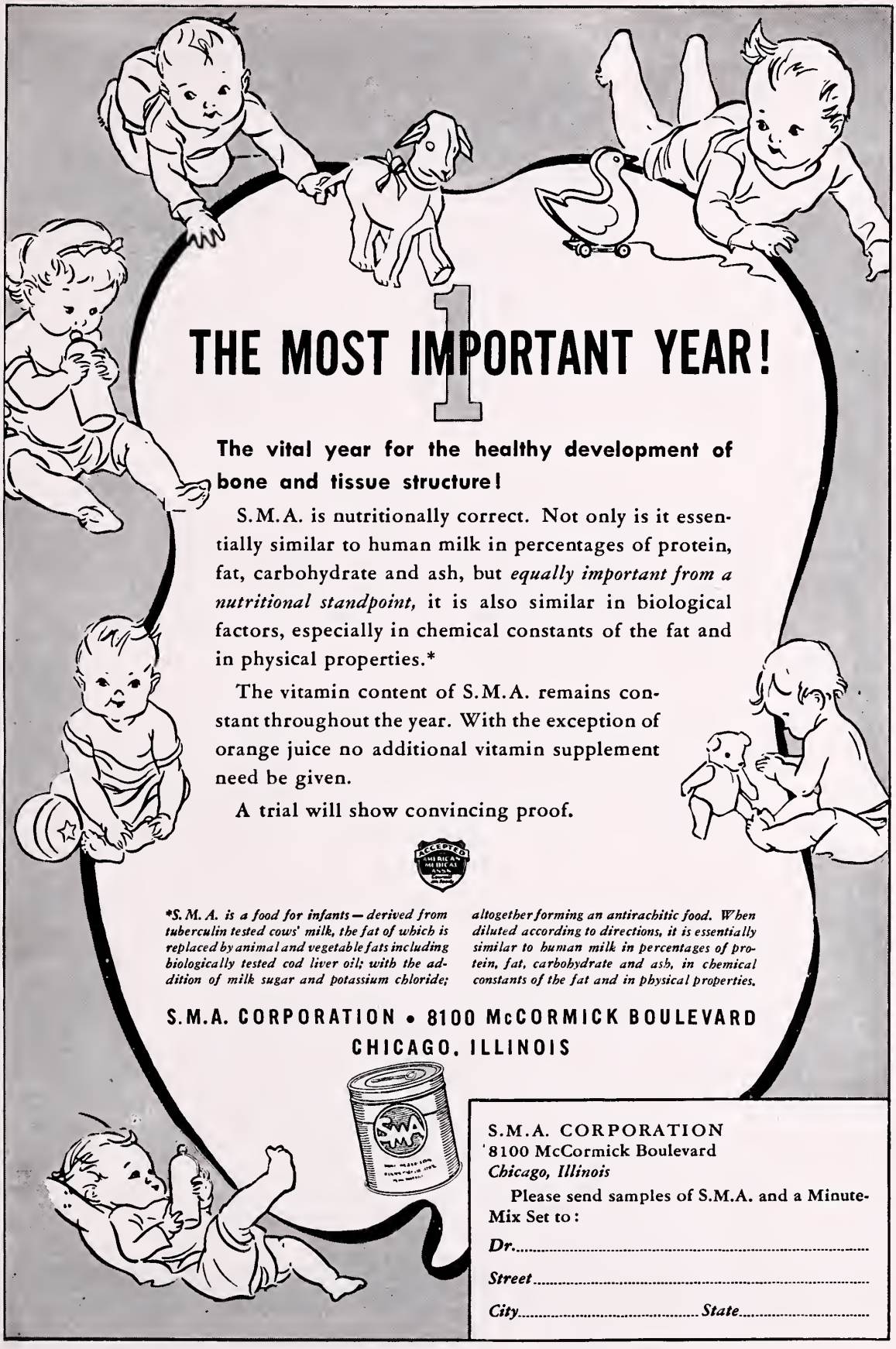
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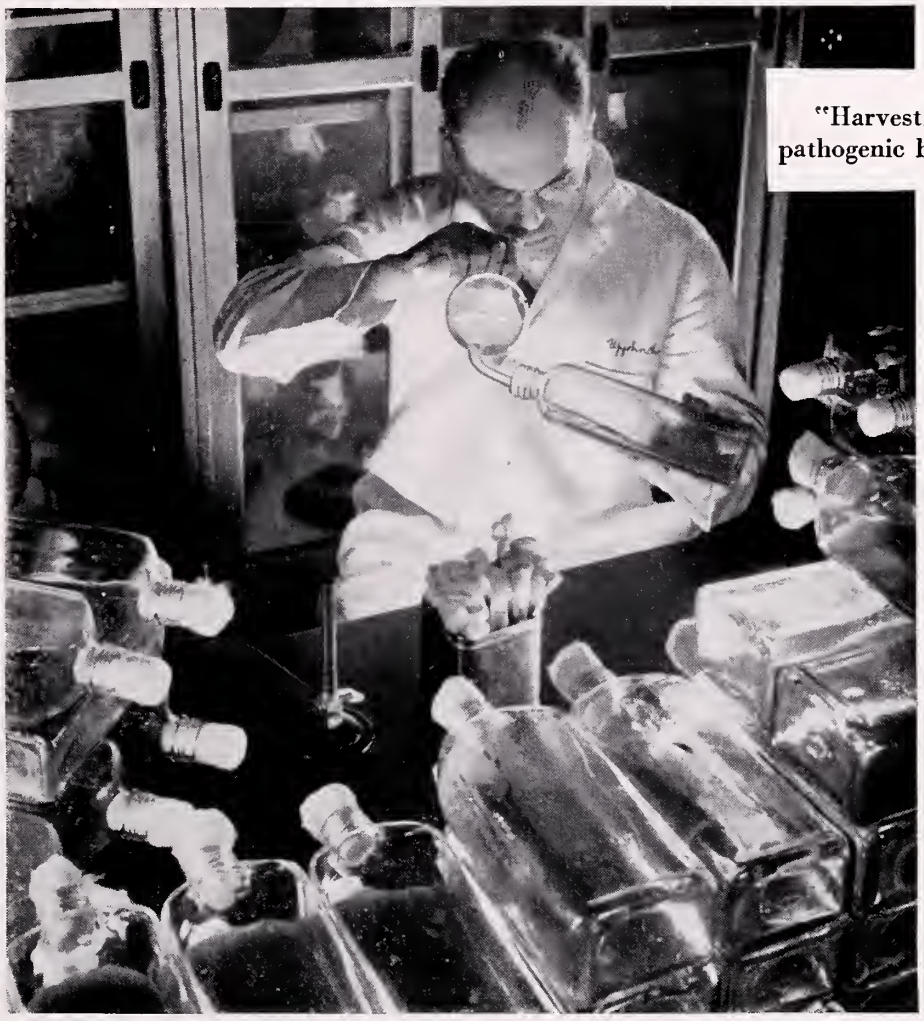
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BIBLIOGRAPHY

GUTTMANN, E.—The Effect of Benzedrine on Depressive States—*J. Ment. Sci.*, *82*:618, September, 1936.

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REPORT OF THE COUNCIL ON PHARMACY AND CHEMISTRY (Announcement of Acceptance)—*J.A.M.A.*, *111*:27, July 2, 1938.

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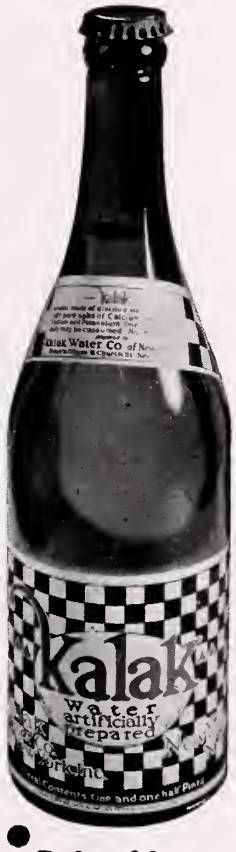
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*Fantus, B.: Therapy of Disturbances Due to Heat, J.A.M.A. Sept. 29, 1934, p. 990.

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A MESSAGE TO HOME CANNERS FROM THE CANNING INDUSTRY

● Every year, in various regions of the country, a considerable amount of the produce from thousands of small orchards and gardens is preserved for future use by canning in the home. Despite much that has been written on the subject (1), outbreaks of botulism from improperly heat processed home-canned foods continue to be reported.

To eliminate the possibility of botulism from their products—specifically those foods of the "non-acid" type—home canners should take a page from the experience of commercial canners. Through considerable research, the American canning industry has scientifically established the necessary processing requirements for products of this character. For non-acid foods, modern canners employ only recommended process time and temperature schedules(2) known to be adequate to destroy the heat-resistant spores of clostridium botulinum whose growth produces the toxin which causes the deadly type of food intoxication known as botulism.

Brief comment on the heat-processing requirements of common foods might be in order. In general, foods or food products may be classed into two groups according to their acidity, i.e., the "acid" and "non-acid" classes with pH values below and above 4.5, respectively. The acid foods include tomatoes and the common fruits. These foods are not favorable to the growth of clostridium botulinum and consequently they may be safely processed at 212°F., or the temperature of boiling water.

The non-acid products, however, present a special processing problem. Such products —meat, fish, fowl, milk and most common vegetables—can be adequately processed only at temperatures above 212°F. As the records indicate (1) botulism in home canned foods may result from processing non-acid foods in boiling water. Safe canning of these foods in the home, therefore, requires the use of properly operated "pressure cookers"—identical in principle with the "retorts" used by commercial canners —which will permit the use of a process under steam pressure. Usually 10 lbs. steam pressure is used in these cookers which corresponds to a processing temperature of 240°F.

Home canners desiring to pack non-acid products should obtain a copy of United States Department of Agriculture Farmers Bulletin No. 1762. In this bulletin are described the necessary equipment, precautions, and time and temperature processing schedules required for the safe canning of non-acid foods in the home. If the necessary equipment cannot be obtained and the recommendations contained in the above bulletin cannot be faithfully followed, some means of preservation of non-acid products other than canning should be sought.

In the interests of public health, it is our sincere hope that home canners may soon become educated to the necessity of steam pressure processes for non-acid foods. Experience dictates that only by processes of this type, with a time and temperature schedule suitable for each particular product, can botulism from non-acid home canned foods be effectively controlled and ultimately eradicated.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

1. 1934. J. Home Econ. 26, 365-376.
   1935. Amer. J. Pub. 25, 301-313.
   1935. J. Amer. Med. Assn. 105, 205.
   1936. Food Research 1, 171-198.
2. 1937. National Canners Association, Washington, D. C. Bulletin 26-L, 3rd Ed.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the forty-eighth in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



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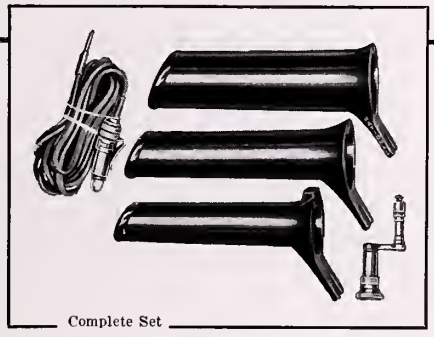
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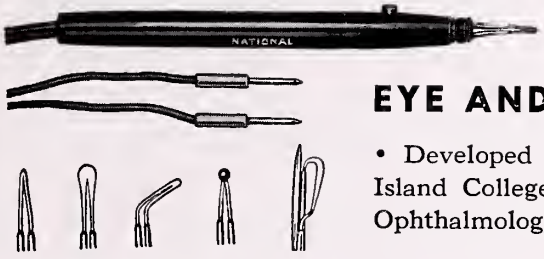
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SURGERY IN THE TREATMENT OF THE DISORDERS OF THE AUTONOMIC NERVOUS SYSTEM

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The literature concerning the autonomic nervous system has become so extensive that it would be impractical in a paper of this scope to present a comprehensive review. It would seem profitable, however, to outline the anatomy and physiology of the system with particular reference to the various clinical problems in order better to comprehend the surgical approach to their solution.

I. *Anatomy.*[1-5] The autonomic nervous system is composed of a series of ganglia, nerves and plexuses which have during the course of embryological development been moved out from the central nervous system. Its origin,[6,7] like that of the latter system, is now understood to be entirely ectodermal. From the viewpoint of comparative anatomy it can be recognized as by far the more primitive entity. Appropriately it innervates the glands, the heart, and the smooth muscle fibers of the viscera and blood vessels.

Like the more familiar voluntary nervous system, it is fundamentally segmental in nature. In both instances the individual segmental unit is the reflex arc. It will be remembered that the simplest voluntary reflex arc consists of two fibers, the afferent or sensory and the efferent or motor. The afferent fiber enters the spinal cord through the dorsal root of the spinal nerve. Its cell body lies in the ganglion of the dorsal root before it enters the spinal cord. Within the anterior horn of the spinal cord it communicates with the cell body of the efferent motor neurone which enters the spinal nerve by way of the anterior root.

The involuntary arc is similar to but not identical with the reflex system just described. It is composed not of two but of three fibers, one afferent and two efferent. Separated from the roots of each spinal nerve is a sympathetic ganglion, which is the unique and characteristic element of the autonomic nervous system. This ganglion is connected to the spinal nerve by the ramus communicans, which is composed of the gray unmyelinated ramus and the white myelinated ramus. The first of the three fibers of the visceral reflex arc is the visceral afferent or sensory fiber. Upon arriving from the periphery this fiber enters the sympathetic ganglion and then, being myelinated, it traverses the white ramus to the dorsal root of the spinal nerve. Not unlike the voluntary afferent fiber its cell body is located in the dorsal root ganglion. In the lateral horn of the cord it contacts the cell body of the second fiber of the visceral reflex arc, the preganglionic efferent fiber, which leaves the cord through the anterior root of the spinal nerve. This fiber is likewise myelinated and hence passes out through the white ramus from the central root to the sympathetic ganglion. Here it communicates with the cell body of the third element of the visceral arc, the postganglionic efferent fiber. This fiber is unmyelinated and hence returns by way of the gray ramus to the spinal nerve for ultimate distribution to the peripheral parts. In other words in its simplest form the reflex arc of the autonomic nervous system consists of (1) a visceral afferent fiber, (2) a visceral efferent preganglionic fiber, and (3) a visceral efferent postganglionic fiber.

Both afferent and efferent fibers may reach their respective goals either through the ordinary peripheral nerve trunks or through special sympathetic nerves, such as the three splanchnic nerves. Generally, however, with certain exceptions to be noted, the visceral afferent fiber and the preganglionic efferent fiber must pass through a sympathetic ganglion and its corresponding white ramus.

These basic anatomic facts, complicated as they unquestionably are, reduce the autonomic nervous system to its simplest terms. It should be realized, however, that in actual practice the autonomic nervous system is exceedingly complex. A typical reflex arc will often cover not one, but several segments. The sympathetic trunks, which run vertically through the neck, thorax and abdomen on either side of the vertebral column, join the ganglia together and carry the central communication between segments.

In the many peripheral plexuses and ganglia there are further innumerable intercommunications. It should be emphasized that the diffuse

spread of stimuli over several segments and widespread mass effects, not delicately coordinated, in contrast with the accurately governed voluntary responses, are a distinguishing feature of the autonomic nervous system. In most instances, nevertheless, the basic outline as given should suffice to clarify the usual surgical procedures.

II. *Physiology.*[2, 3, 5, 8, 9] Functionally three great subdivisions of the autonomic nervous system may be recognized. These subdivisions depend upon the origin of the preganglionic fibers. They are (1) the cranial autonomic system, whose preganglionic fibers issue from the third, seventh, ninth, tenth, and eleventh cranial nerves; (2) the thoracolumbar autonomic system, arising through the thoracic and upper lumbar spinal nerves; and (3) the sacral autonomic system, the fibers of which run in the visceral rami of the second, third, and fourth sacral nerves. There are no fibers arising in the cervical cord. The three cervical ganglia receive their preganglionic fibers from the thoracic segments and are an integral part of the thoracolumbar system.

The fibers of the thoracolumbar stream as previously described run by way of the white rami to the sympathetic trunk. The cranial and sacral fibers, however, having no analagous tract, proceed directly to the sympathetic plexuses of the periphery. Moreover, while the thoracolumbar preganglionic fibers terminate in the ganglia of the trunk, those of cranial and sacral origin have their endings in the terminal ganglia. It has been further demonstrated that the responses of the cranial and sacral subdivisions to drugs, such as atropine and epinephrine, while differing from that of the thoracolumbar system, are nevertheless similar to each other. It is customary therefore to speak of them together as the craniosacral autonomic system, as contrasted with the thoracolumbar autonomic system.

Generally physiologists speak of the thoracolumbar as the sympathetic system and the craniosacral as the parasympathetic system. Most structures innervated by the autonomic nervous system receive a double nerve supply with fibers from both subdivisions. Furthermore the parallel nerve supply from these two sources is usually of opposite function. There are, however, a limited number of organs that have only one set of innervating fibers.

The antagonistic function of the two systems is emphasized by their response to drugs.[10, 11] Epinephrine is effective by stimulating the sympathetic system, and physostigmine and pilocarpine by stimulating the parasympathetic. Atropine enhances sympathetic activity by paralysing the parasympathetic. In this connection it should be stressed that there are many inconsistencies in the response of the respective systems to these and to other drugs and hormones. Furthermore the response to a given substance may be altered strikingly by varying the dosage, even to the extent of producing a contrary effect.

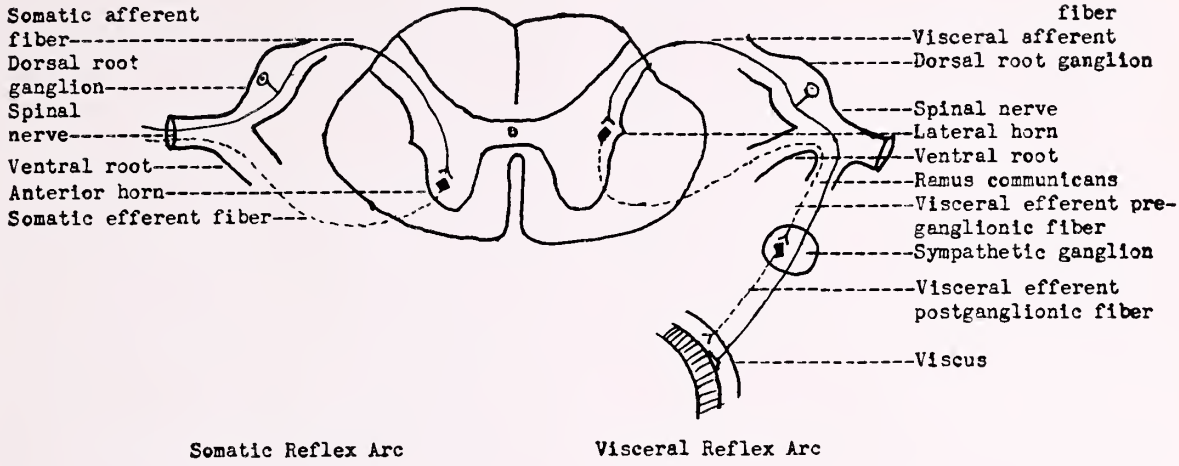
The more detailed pharmacology and physiology as revealed by Myerson and others[12-15] with the newer drugs such as mecholyl, benzedrine sulphate and prostigmin are very important, but are somewhat foreign to the present discussion. The same is true of the studies[16-21] on sympathin and acetylcholine (parasympathin) and on the chemical mediation of nerve impulses.

A brief outline, however, of some of the functions of the autonomic nervous system will be given. The sympathetic division, through the superior cervical ganglion, innervates the following structures in the eye: (1) the dilator muscle of the pupil, (2) the smooth muscle in the levator of the upper lid; and (3) the smooth muscle fibers at the back of the eye (called Müller's muscle) which are believed to push the orbit forward. Removal of the superior cervical ganglion, therefore, will result in a loss of function in these three structures with consesequent pupillary construction, ptosis of the upper lid, and enophthalmos,—a triad known as Horner's syndrome.[22]

Certain cutaneous structures throughout the body are characteristically supplied by the sympathetic division. Activity of this division in the various segments results in (1) secretory function of the corresponding sweat glands,[23] (2) stimulation of the pilomotor muscles with resulting erection of the hairs, and (3) vasoconstriction of the peripheral arterioles, and probably of the capillaries. The effect of this activity is a cool moist skin, as observed typically in cases of Raynaud's disease.[24] Removal of sympathetic innervation, on the contrary, halts the secretion of the sweat glands and the vasoconstriction, resulting clinically in a warm dry skin.

The thoracic viscera are also innervated by the sympathetic division through the cervical ganglia. Activity of these fibers results in (1) acceleration of the heart with increased force of contraction, and (2) dilatation of the bronchi by inhibition of their smooth muscle.

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In the abdomen the whole small and large intestine and to some extent the stomach are influenced by the sympathetic. The effect upon these organs is as follows: inhibition of the peristaltic movements, diminution in tone of the visceral musculature, and contraction and closure of the sphincters. In Hirschsprung's disease of the colon,—characterized by loss of tone and peristalsis, and marked dilatation—removal of the sympathetic innervation produces the opposite effect, namely increased tone and peristalsis with a consequent relief of symptoms.

Most of the blood vessels of the visceral area are supplied with vasoconstrictor fibers from this system. Much of the peripheral resistance which maintains the blood pressure level is produced in the splanchnic vascular bed. It follows then that stimulation of the splanchnic nerves results in an increase in blood pressure while their removal, such as has been done recently in hypertension, results in a lowering of the blood pressure.

Among pelvic organs receiving sympathetic supply is the urinary bladder. Stimulation of its sympathetic innervation results in contraction of the sphincter and relaxation of the detrusor or emptying muscle, an arrangement analogous to that in the gastrointestinal canal.

It has already been pointed out that parasympathetic control produces in general the opposite effect from that of sympathetic. The cranial portion through the vagus nerve depresses all activities of the heart — impulse formation, conductivity and contractility — with a resultant slowing of the heart and diminution in the force of its contraction. In the alimentary canal it increases motor activity and relaxes the sphincters. The cranial division produces in addition salivary gland activity.

The sacral division of the parasympathetic supplies motor fibers to the bladder and rectum. Stimulation results in contraction of the detrusor and relaxation of the sphincter muscle of the bladder with consequent emptying. In similar fashion it produces contraction of the musculature of the colon and rectum with dilatation of the sphincter ani internus and consequent evacuation of the lower bowel. The parasympathetic also controls erection of the penis.

Only a limited reference in the present discussion need be made to the afferent or sensory portion of the autonomic nervous system.[25] The broad subject of referred visceral pain is more closely allied to the problems of general medicine and surgery. A few types of visceral pain, however, such as angina pectoris and dysmenorrhea have been attacked directly. These will be discussed later.

III. *Historical.* Various anatomical observations of the autonomic nervous system have been made dating back to the description by Galen[26] in the second century of the paravertebral sympathetic ganglia. John Hunter[27] in 1776 suggested that the function of the nerve supply of the "involuntary parts" was to correlate their activity with that of the "voluntary" parts and with the mind. Bichat[28] in 1802 first suggested the term "vegetative nervous system." Claude Bernard's monumental researches[29] led him to the belief that the animal body became independent of its external environment only after developing a mechanism for maintaining the constancy of the internal environment.

This led to the remarkable studies in more recent years by Cannon[30, 31] on "physiological homeostasis," the adjustment of the body to its environment.

Bernard[32] in 1852 discovered that the control of radiation and storage of heat in the body is accomplished by means of vasodilatation and vasoconstriction through the mediation of the nervous system. He proceeded to demonstrate experimentally vasodilatation in the rabbit's ear following resection of the cervical sympathetic nerve. In 1862 Raynaud[24] described cases of "local asphyxia and symmetrical gangrene of the extremities" and suspected the role of the sympathetic nervous system as the source of vasomotor spasm.

Probably the first operations on the autonomic nervous system were carried out by Alexander[33] in 1889 and Jonnesco[34] in 1896. They both performed cervical sympathectomy in an attempt to cure epilepsy, but without success. Jaboulay[35] in 1899 performed a cervical sympathectomy to relieve Graves' disease, but this was likewise unsuccessful. In 1909 Eppinger and Hess[36, 37] first formulated the clinical conception of vagotonia and sympathicotonia. This work was important in drawing attention to the problems of autonomic unbalance and in providing an intelligible basis for the management of many of the functional visceral disorders.

Jonnesco[38] in 1916 performed the first successful cervico-thoracic sympathectomy for the relief of angina pectoris. Thus it was established beyond peradventure that visceral pain could be relieved by operations on the autonomic nervous system. About the same time Leriche[39] was demonstrating the possibility of relieving the pain in causalgias and of increasing the circulation in extremities by periarterial sympathectomy, that is removal of the adventitia from a peripheral artery. Periarterial sympathectomy although important as a landmark has now largely been replaced by other operations based on sounder anatomic principles.[40]

An added impetus was given to the cause of sympathetic surgery in 1924 by Hunter[41] and Royle[42] who advocated resection of the sympathetic rami to reduce the excessive muscle tone in spastic paralysis. Although the original purpose of the procedure was not accomplished, certain incidental observations of these workers have been of far-reaching importance. They revealed that the total loss of sympathetic impulses to a human extremity resulted in vasodilatation and the elimination of sweating, with consequent conversion of a cool, pale, moist extremity to one which is warm, pink and dry. These observations led directly to the treatment of Raynaud's disease and other vasospastic phenomena by operations on sympathetic nerves.

The same observers[43] in 1927 noticed that the removal of inhibiting fibers to the sphincters of the lower bowel resulted in increased motility. This suggested a new mode of attack on hitherto intractable forms of megacolon and obstipation.

While treatment by lumbar sympathectomy of vasospastic diseases of the lower extremity has been almost uniformly successful, the end-results[44-47] of cervico-dorsal sympathetic ganglionectomy for vascular spasm of the upper extremity have not until recently been satisfactory. While the immediate result was often excellent, the vascular spasm returned in the course of six months to a year. This could not be explained on the basis of regeneration of nerve fibers as Horner's syndrome and a complete sudomotor paralysis persisted.

Extensive experimentation has been carried out by Smithwick, White and others[48-53] to determine the cause of recurrence of vascular spasm after ganglionectomy. When the resection is sufficiently extensive the spasm may take only ten days to three weeks to develop. They have concluded that this type of vascular response is caused directly by the effect of circulating epinephrine on the vessel wall. As long ago as 1904 Meltzer and Auer[54] observed that twenty-four hours after removal on one side of the superior cervical ganglion in a rabbit a given dose of epinephrine produced a marked dilatation of the pupil and constriction of the vessels of the ear on that side, while on the normal side no effect was apparent. It has been shown in rabbits and monkeys that this epinephrine sensitivity is much less marked when the preganglionic vasoconstrictor neurons alone were severed, and the postganglionic fibers were left intact. Hampel[55] has shown in the nictitating membrane of the cat that smooth muscle denervated by degeneration of the postganglionic fibers is over twice as sensitive to epinephrine as it is after destruction of only the preganglionic portion of the sympathetic reflex arc. Cannon[56] has stated recently that the increased sensitiveness of denervated neurons very likely follows a general rule that "denervation of structures renders them more sensitive to their natural stimuli."

From these observations it has been concluded[50] that the return of vasospasm after ganglionectomy is caused by increased epinephrine sensitivity which results from degeneration of the postganglionic fibers whose cell bodies lie in these ganglia. It seemed paradoxical that the same phenomenon did not occur in the lower extremity when lumbar ganglionectomy was done. White[51, 50] has pointed out, however, that the postganglionic neurons to the sciatic nerve probably arise in the lowest lumbar and sacral ganglia. Removal of the second and third lumbar ganglia, such as is usually done for the lower extremity, probably results in a division of the preganglionic fibers which pass through them. Hence the degree of epinephrine sensitivity is of the lesser order which would be expected with a perganglionic sympathectomy.

Another field in which there has been considerable progress in recent years is in the surgical treatment of hypertention. Total denervation of the adrenals as advocated by Crile[57] and subtotal adrenalectomy described by DeCourcey[58] have been largely replaced by splanchnic nerve resection devised by Adson and others[59, 60] at the Mayo Clinic. Extensive rhizotomy,[61, 62] consisting of division of the anterior nerve roots from the sixth dorsal to the second lumbar, is likewise rational and effective. Because the latter procedure is much more formidable, however, only Heuer[62] and his co-workers continue to give it serious consideration. It is the purpose of both operations, splanchnic nerve resection and rhizotomy, to interrupt the vasoconstrictor nerve supply to the splanchnic vascular reservoir, which is of such great importance in governing the level of arterial pressures.

Another type of cases that has recently attracted considerable attention is that exhibiting the so-called carotid sinus syndrome described by Weiss and Baker[63] in 1933. These workers have separated from the large and ill-defined group of syncopes a subgroup showing certain well-defined clinical manifestations. Selected types of the carotid sinus reflex can be cured by surgical treatment in the way of denervation of the carotid sinus. These problems will be discussed later in more detail.

IV. *Clinical.* There is hardly opportunity in the present review to discuss in complete detail the clinical features of the various conditions under consideration. Emphasis will be placed rather on indications and methods of treatment.[64]

1. *Raynaud's Disease and Scleroderma.* The description of this entity as previously mentioned appeared in the year 1862.[24] It is preponderantly though not exclusively a disease of females. In the usual case there will be no abnormality of the peripheral arteries. The radial, posterior tibial and dorsalis pedis pulsations are readily felt. The obvious vasospasm is limited to the hands and feet with the greatest changes apparent in the fingers and toes. The changes are characterized by their symmetrical nature. There is a critical temperature below which vasospasm sets in. This varies with the intensity of the disease from 65 degrees in a mild case to as high as 80 degrees in a severe one.

The play of colors is one of the typical features of the disease. When the temperature drops below the critical level cyanosis appears, but rapidly disappears when the extremity is warmed. It may persist most of the time, however, in the more severe cases where the circulation is never fully restored. Later in the disease there may be attacks of dead white blanching. During the asphyxia the patient may suffer from numbness and pain which changes to burning and paresthesias during recovery from the attack.

Especially in the younger patients excessive sweating is a common complaint. This may be particularly annoying when they are excited or emotionally upset. It is now generally agreed[65, 66] that in the early stages of the disease there are no permanent changes in the vessels. Later, however, in the presence of chronic acrocyanosis[67] there have been demonstrated well-defined pathological changes in the way of obliterating endarteritis. Together with the vascular changes other structural and trophic alterations in the skin, nails, and bone may occur after prolonged and recurrent attacks. Late in the course of the disease the skin may become shiny and atrophic, and sclerosis of the subcutaneous tissues occurs. These are the characteristic changes of scleroderma.[68]

Treatment. The mild cases may be successfully treated by warm clothing such as woolen gloves and socks, or when possible by removal to a warmer climate. In the more severe cases, however, it will usually be necessary to resort to surgery. After ruling out other conditions such as Buerger's disease, arteriosclerosis and the cervical rib syndrome it is essential to perform tests to determine whether or not the case is a sutiable one for operation. In the more advanced cases organic changes in the

vessels may be so marked that there is little hope for improvement.

In order to test[5, 69-71] for the degree of vasospasm some form of skin thermocouple is essential for measuring skin temperatures. The extremity is permitted to reach a constant temperature in a room kept preferably at about 68 to 70 degrees Fahrenheit. Then either of two general methods may be applied to overcome any sympathetic activity present: (1) inhibition of the sympathetic tone by some physiological stimulus, or (2) procaine block of the peripheral nerves, or of the sympathetic ganglia or rami. Following this treatment the skin temperatures are again recorded. The temperature level approached is the average maximum vasodilator response for normal arteries taking 86.5 degrees Fahrenheit for the usual lower limit. In individual instances higher temperatures may be reached. A slight or minimal rise in temperature indicates absence of vasospasm, while a great or maximal rise indicates the presence of vasospasm.

Inhibition of the sympathetic tone may be accomplished by general anaesthesia, heating of the body, or foreign protein (typhoid vaccine) injection. Procaine block may be carried out as spinal anaesthesia, paravertebral block, or peripheral nerve block. The procaine block method is the simplest and most clearcut, and is the one that has come to be generally used. In the case of the lower extremity this may take the form of spinal anaesthesia or posterior tibial nerve block. In the case of the upper extremity it may take the form of paravertebral injection, or ulnar and median nerve block. Recently DeTakats[72-74] has described a somewhat different type of test using intravenous sodium nitrite together with oscillometer readings. This method has not yet been widely accepted.

After demonstrating the presence of a significant degree of vasospasm some form of operative treatment must be selected. For the lower extremities the operation of choice is abdominal lumbar sympathetic ganglionectomy as described by Adson and Brown[75-76] and others.[77-81] Exposure is through a lower midline incision. The left chain is approached by dividing the lateral leaf of sigmoid mesentery and retracting the sigmoid medialward. The chain can be identified lying beneath the aorta in the gutter between the psoas muscle and the vertebrae. The fourth to the second lumbar ganglia are resected comprising 6 to 8 cm. of the chain, measuring upward from the common iliac artery at its bifurcation from the aorta.

The right chain can be approached by an incision through the posterior peritoneum just lateral to the border of the vena cava. The trunk on this side bears the same relation to the vena cava and common iliac vein as that on the left does to the aorta and common iliac artery. Resection from this point is similar. The bilateral operation as described constitutes a preganglionic sympathectomy for the lower extremities.

The procedure of choice for the upper extremities is the dorsal preganglionic sympathectomy described recently by Smithwick[50, 77] and Telford.[81] The approach is through the vertical paramedian incision 6 cm. long, 3 cm. from the midline, centering opposite the second dorsal spine. The inner one inch of the third rib and corresponding transverse process are resected. Then the inner one and one-half inches of the second and third intercostal nerves are resected from the intervertebral foramen outward. The dorsal sympathetic trunk is identified and it is divided below the third dorsal ganglion. The proximal free end of the trunk is sutured to the muscles to prevent regeneration. Kuntz[82, 83] has recently inferred from animal studies that appreciable numbers of sympathetic fibers to the upper extremity pass over the first dorsal nerve which is left intact in this operation. From studies on the monkey by White and from his own clinical results, however, Smithwick[50] has concluded that such fibers as may be present in the first dorsal nerve are not significant. This is of considerable importance because section of the first dorsal nerve would produce motor and sensory paralysis of the arm. It may be further added that after this new type of sympathectomy, no Horner's syndrome is produced. The procedure when carried out in the manner described constitutes in all probability a preganglionic dorsal sympathectomy, leaving the postganglionic fibers intact. After a period of recovery a similar operation may be performed for the remaining side.

In occasional instances vasospasm in the extremities may be controlled by dorsal and lumbar paravertebral injection of alcohol.[5, 84] Under most circumstances, however, this is not to be recommended as recurrences after six months are not unusual.

2. *Thrombo-angiitis Obliterans (Buerger).* The clinical manifestations and basic treatment of this disease have been discussed elsewhere.[85, 86] We are concerned in the present instance chiefly with the associated vasospastic phenomena. There is no doubt that the inflammatory changes occurring both

in the arteries and in the veins as originally pointed out by Buerger constitute the underlying pathological process. There is very often, however, an appreciable amount of vasoconstrictor spasm superimposed on the obliterative lesion. This affects not only the primary circulation but the collateral as well. It seems obvious that the attainment of maximal vasodilatation under such circumstances should produce salutary effects.

Treatment. In general surgical procedures are not indicated in mild cases or when medical measures are effective. The degree of vasospasm can be determined by the methods already outlined for Raynaud's disease. In the present instance, however, a different approach to the problem of treatment is indicated. It will be remembered that the peripheral nerves carry in addition to the sensory components the efferent vasoconstrictor fibers. By properly selecting the level of exposure these nerves can be blocked without causing any perceptible motor involvement. It is thus possible when dealing with the lower extremity to accomplish in addition to the vasodilatation the elimination of pain which in itself is so often a prominent complaint. Not infrequently the pain alone may be sufficient indication for the operation.

In 1922 Silbert[87] first proposed alcohol injection of the posterior tibial nerve for the relief of intractable pain in thrombo-angiitis obliterans. Almost ten years later Smithwick and White[88] devised a method for complete denervation of the foot by alcohol injection of all the nerves. In 1933 Laskey and Silbert[89] advocated section and immediate suture of the nerves as being safer and more satisfactory than alcohol injection; they have continued to use this method.

The operation to be recommended, however, is that of nerve-crushing more recently described by Smithwick and White.[90] The nerves are exposed through short vertical incisions and are crushed with a hemostat for a distance of ¼ to ½ inch, depending upon the desired duration of anaesthesia. A meticulous atraumatic technique is essential and the operation must never be done in the presence of lymphangitis. Localized areas of gangrene in the toes, however, are not a contraindication. In order to completely denervate and sympathectomize the foot five nerves must be crushed.. It is generally advisable to block all of these nerves. The optimum level at which to accomplish this is at the junction of the middle and lower thirds of the leg. This will include all collateral branches, but at the same time avoid any important motor involvement. The five nerves are as follows: (1) superficial peroneal, (2) deep peroneal, (3) sural, (4) posterior tibial, and (5) saphenous.

Nerve regeneration with return of sensation and vascular tone can be expected in three to six months after this treatment. Trophic ulcers due to the loss of sensation are very rare. If there is a concomitant return of pain or vasospasm the nerves can be crushed again for an additional period. If it seems desirable after the return of nerve function to produce prolonged vasodilatation, this may be accomplished by a lumbar sympathectomy,[91-97] differing in no wise from that described for Raynaud's disease. Nerve crushing is not of course applicable to the vasospasm of the upper extremity. A preganglionic dorsal sympathectomy[50] may be indicated in such cases.

3. *Essential Hyperhidrosis.* There are a number of individuals suffering from mild sympathetic imbalance who are troubled more by the excessive sweating than by any slight coolness or discoloration of the extremity. Some of these persons are so inconvenienced by their affliction that they are unable to seek employment or to carry out social obligations. Embarrassment or emotional strain may lead to a marked secretion of perspiration even to the extent of its dripping from the hands and feet. This is especially distressing in occupations where the hands are under scrutiny or where books, papers and fabrics must be handled.

Treatment. Preganglionic sympathectomy by the methods previously described is a most satisfactory treatment,[23, 98-100] and is peculiarly gratifying to the patient. The extremities become warm and permanently dry. It is usually necessary in fact to recommend the application of hydrous wool fat ointment in order to preserve the suppleness of the skin.

4. *Chronic Rheumatoid Arthritis.* Patients suffering from this disease often exhibit cold, wet, clammy skin over their hands and feet. Where this is present distinct benefit may result from sympathectomy.[84, 101] It is exceedingly doubtful, however, whether the joints will be affected to any appreciable extent, especially in the presence of actual deformity.

5. *Infantile Paralysis.* Cold cyanotic extremities with excessive perspiration are frequently encountered in poliomyelitis.[102, 103] Sympathectomy may give considerable relief under these circumstances.[78]

Recent work by Harris and McDonald[102] indicates that even growth and development of the affected extremity may be stimulated.

Treatment. In this connection it should be noted that where a unilateral lumbar ganglionectomy alone is indicated it may be carried out through a posterior approach.[5] The patient is placed in the lateral kidney position. The incision starts at the lower border of the twelfth rib at the outer edge of the sacrospinalis muscle and parallels this structure to the crest of the ilium. Then it curves forward along the brim of the pelvis for 5 to 10 cm. The lumbodorsal fascia is divided and the oblique and transverse abdominal muscles separated from the latissimus dorsi, sacrospinalis and quadratus lumborum. This separation may be facilitated by entering the triangle of Petit. The muscles are separated from the loose retroperitoneal tissues. The peritoneum and ureter are retracted forward and medialward until the vena cava and aorta or iliac arteries are exposed. The lumbar sympathetic chain will then be found in the same relation to these structures as in the anterior approach. After resection the wound should be carefully repaired in layers.

6. *Erythrocyanosis, associated with Chronic Chilblains.*[104, 105] This condition, occurring typically in young women, is distinguished by a reddish-blue discoloration, generally of the lower half of the leg. The color blanches on pressure, but returns quickly from all sides with dark blood. The subcutaneous tissues are thickened, and nodules develop which may heal by cicatrization or form indolent ulcers. Telford and Simmons[105] reported ten cases in which lumbar ganglionectomy provided relief from the symptoms and arrested the progressive scarring. Ross[78] found likewise that operation produced a warm pink skin in all uncomplicated cases, but would not prevent the recurrence of ulceration.

7. *Traumatic Vasometer Neuroses and Causalgia.* Observations[86, 106] made during the world war have emphasized the importance of peripheral angiospasms secondary to trauma or to involvement of peripheral nerves. The latter especially are characterized by varying degrees of localized hyperesthesia and burning pain and are known as causalgias.[106]

Treatment. Every effort should be made to remove local sources of irritation, such as scar tissue about nerves, and to improve the condition of the extremity with physiotherapy. When these measures fail tests should be carried out with procaine, as previously outlined, to ascertain the possibilities of benefit from sympathectomy. In favorable cases relief both from the vasospastic and from the sensory complaints may be expected.[78] The operations are those already described.

8. *Idiopathic Megacolon (Hirschsprung).* There is a definite group of primary enlargements of the colon having a neurogenic origin. The typical cases are characterized by an obstinate constipation beginning at birth or in early childhood together with a progressive abdominal distention. The disease may occasionally be discovered in adults. The etiologic factor is an imbalance of the autonomic mechanism controlling the lower half of the large intestine. Removal of the inhibiting sympathetic activity as originally advocated by Wade and Royle[43] in 1927 often produces striking improvement[78] in bowel activity.

Treatment. After the usual medical regimen has been given a thorough trial, a fairly conclusive test may be carried out to determine the efficacy of surgical intervention. Spinal anaesthesia offers a convenient means of blocking the sympathetic supply. Combined with a barium enema it will furnish a graphic demonstration of the effectiveness of sympathetic denervation. In the milder cases spinal anaesthesia followed by adequate medical treatment may of itself result in restoration of bowel function without the necessity of subsequent operative interference.[107]

In order to completely rule out a mechanical obstruction, sympathectomy for this condition is performed preferably through an abdominal incision. Rank and Learmonth[108] advocated resection of the superior hypogastric plexus together with the inferior mesenteric plexus which surrounds the inferior mesenteric artery. White[5] points out, however, that it is exceedingly difficult to thoroughly remove the plexus about the inferior mesenteric artery. Furthermore in males removal of the superior hypogastric plexus causes a loss of power to ejaculate. He recommends *bilateral* lumbar ganglienectomy, as already described for the vascular conditions, as being reasonably effective and without these handicaps. In females, however, there is no objection to the first mentioned operation, which should be combined with a left lumbar ganglionectomy to assure an effective resection.

9. *Dysmenorrhea.* As pointed out by Counsellor and Craig[109] the cases of dysmenorrhea should be divided into two groups, those without any associ-

ated pelvic pathology and those presenting related pelvic surgical conditions which may add to the symptoms. The primary etiologic factor in the first group is a disturbance in the pelvic sympathetic nervous system. This may be corrected by resection without disturbing in the least the normal functions of menstruation and childbirth.

Treatment. Operation is indicated in both the primary and secondary groups, but only after medical and non-operative measures have failed to give adequate relief. The effective procedure is resection of the superior hypogastric plexus, the so-called presacral nerve. The approach[5, 112] is through a left paramedian incision from above the umbilicus almost to the pubis. With the patient in Trendelenburg position the posterior peritoneum is opened from a point 2 cm. above the bifurcation of the aorta to a point 5 cm. below. The nerves lie in a delicate plexus of pelvic lymphatics and loose connective tissue. All of the tissue in the hollow of the sacrum between the two iliac arteries is cleaned out by blunt dissection. This procedure requires delicate technique and careful hemostasis. At the same laparotomy any associated gynecologic disorder may be corrected surgically.

The results[109-116] of this operation are particularly gratifying and complete relief can be expected in a very high percentage of cases.

10. *Pelvic Malignancy.* Although the results[51, 112] are not as consistent as in the preceding group of cases, presacral neurectomy may nevertheless be expected to relieve pain in some instances. Lahey and Cattell[117] advocate resection of the presacral nerve in extensive tumors of the rectum whether operable or not as a prophylactic measure at the time of exploration. A number of gynecologists now combine this same procedure with hysterectomy for ovarian or uterine carcinoma, or perform it alone where the primary condition is inoperable. Because of extension to higher levels, however, it becomes necessary in some patients to perform intraspinal alcohol injections[118] or cordotomy if adequate relief from pain is to be obtained.

11. *Angina Pectoris.* The operative treatment is based on the procedure devised and first successfully used by Jonnesco[38] in 1916. This consisted in complete cervical sympathectomy, including particularly the stellate ganglia. The operation was intended to abolish afferent impulses from the heart passing through sensory fibers which accompany the cervical sympathetic and its rami communicantes. Various modifications and variations of this procedure have been used, but it is now largely in discard because of the uncertainty of results and the definite mortality which it carries in these patients who are often poor surgical risks.[4, 5, 51] Total thyroidectomy as proposed by Blumgart, Levine and Berlin[119] likewise seems to have lost much of its early promise.

Treatment. Much safer, simpler and more consistent is the method of paravertebral alcohol injection first suggested by Swetlow[120] in 1926. White[5, 51] and Smithwick[77] have both reported success with this method and believe it to be the treatment of choice.

The purpose of the injection is to distribute 3 to 5 c.c. of 95 percent alcohol at each of the upper dorsal segments. This is said to result in destruction of the communicating rami rather than of the main trunk or its ganglia. With the patient lying on the contralateral side with knees drawn up 8 to 10 cm. needles are inserted vertically about 4 cm. lateral to the spinous processes of the last cervical and upper three dorsal vertebrae until contact is made with the corresponding ribs. The needles are then directed downward and inward at an angle of 45 degrees passing below the lower border of the ribs. They are then inserted 3 to 4 cm. deeper where contact is made with the bodies of the vertebrae. The points are now near the communicating rami. Great care must be taken to avoid damage to the lung or pleura; and aspiration should be done to make certain that the tip of the needle is not in a blood vessel or in the subarachnoid space. 2 c.c. of 2 percent procaine-epinephrine solutions is then injected into each needle. If the needles are properly placed a Horner's syndrome in addition to well defined areas of anaesthesia and vasodilation should appear. The proper amount of alcohol may then be injected.

The majority of patients respond to the left-sided procedure alone. In those cases where this is not sufficient the right side may also be done several weeks later as a second stage. When the treatment is carefully performed it will yield excellent results with infrequent complications. It may be useful also in relieving the pain of aortic aneurysm.[121]

12. *Hypertension.* For purposes of discussion cases of hypertension may be separated broadly into two groups, the primary or essential type and the secondary.[122] Secondary hypertension occurs typically as a consequence of renal disease. We shall be

concerned in the present instance chiefly with essential hypertension. This condition is characterized by an abnormally high blood pressure which under the stimulus of excitement or physical strain may rise suddenly to high peaks. The disease may develop in any age groups from the first decade on. A distinct family tendency seems evident. Progress of the disease results in retinitis, retinal hemorrhages, papilledema, sclerosis of the vascular system, coronary occlusion, myocarditis, nephritis, cerebral degeneration and cerebral vascular accidents.

Depending upon the rate of progress and the severity of the symptoms essential hypertension may be classified as benign or malignant. The benign type affects persons in the older age groups. The course is moderately rapid and the life expectancy is ten to fifteen years. The malignant type affects younger persons. Here the disease is manifest by a rapidly progressive course and the life expectancy may be barely eighteen months.

Although the etiology of hypertension is still obscure it seems fairly well established that the elevation of blood pressure is caused by increased resistance to blood flow through the arterioles.[122-126] In the early stages of the disease the increased arteriolar tone results from vasomotor stimuli arising in cerebral centers and travelling over sympathetic pathways to the arterioles.

The arteriolar spasm can be demonstrated early in the course of the disease by the cold pressor test.[126] The blood pressure is first taken under control conditions. Then with one hand in ice water the blood pressure is taken in the opposite arm. The rise for normal individuals averages 8 mm. for both systolic and diastolic pressures. In hypertensives the systolic rise averages 37 mm. and the diastolic rise 25 mm., but may be considerably greater. It is of interest to note that the children of parents who have hypertension frequently exhibit an exaggerated response to the cold pressor test.

Operations on the sympathetic nervous system have three apparent purposes:[126]

(1). To decrease resistance to the flow of blood through a large vascular area located within the abdomen. Previous experience in peripheral vasospasm has demonstrated that sympathectomy can reduce arteriolar resistance.

(2). To decrease the discharge of epinephrine from the adrenal medulla.[127, 128] Although the adrenal gland is not important in the pathogenesis of essential hypertension, release of epinephrine as a result of emotional and physical strain does contribute to the elevation in blood pressure occurring in such episodes.

(3). To increase the flow of blood through the kidneys. Goldblatt[129] and others have produced in animals an hypertension closely simulating essential hypertension by placing a clamp on the renal arteries to diminish circulation to the kidneys. It would seem advisable in view of this evidence to increase the bloodflow to the kidneys, even though it can scarcely be said that impairment of renal circulation has been demonstrated as the mechanism producing essential hypertension.

Treatment.[126] At the present time operative intervention should be considered only where the hypertension has been progressive despite adequate medical supervision. Of importance in this connection is the rate of progress of the disease, the response to medical treatment, the age of the patient, and the extent of cardiovascular and renal impairment. The best results will follow when the symptoms are still mild and there is definite evidence of an unstable blood pressure.

Adson[126] lists the criteria for surgical treatment as follows:

(1). When examination reveals an essential hypertension which is progressive and is associated with persistent headaches;

(2). When the blood pressure drops with the patient at rest and under pentothal anaesthesia;

(3). When there is retinal arterial spasm with little sclerosis;

(4). When the duration of the hypertension is short, if it is of the malignant type;

(5). Before cardiac and renal injury have taken place.

Contraindications[130] for operation are:

(1). Age greater than fifty years,

(2). Congestive heart failure,

(3). Angina pectoris,

(4). Marked renal insufficiency,

(5). Advanced arteriosclerosis.

Several different procedures are being used at the present time to interrupt sympathetic stimuli to the vascular bed. Of these three are especially prominent. Since standardization in this field has not yet been attained it seems desirable to outline the three methods.

(1). Bilateral division of the anterior nerve roots from the sixth dorsal to the second lumbar spinal nerve.[61, 62, 126, 131] This is described by Heuer as rhizotomy.

(2). Subdiaphragmatic resection of the splanchnic nerves combined with resection of the lower end of the thoracic trunk and the first and second lumbar ganglia. This is the method advocated by Adson.[59, 60, 130, 132-136]

(3). Extrapleural intrathoracic resection of the splanchnic nerves together with the tenth and twelfth dorsal ganglia. This method has recently been described by Smithwick.[77]

Extensive rhizotomy is carried out in the following manner. With the patient under general anaesthesia laminectomy is done from the first lumbar up to and including the sixth dorsal vertebra. The dura is opened for the full extent of the bony defect, and the proper nerves are identified. Beginning at either end the dentate ligaments are divided and are used to rotate the cord, thus bringing the anterior roots into view. These are identified and are divided between ligatures. The dura and overlying tissues are then closed in layers. Neurosurgical silk technique should be used throughout. The fibers interrupted are largely preganglionic. The procedure may be divided into two stages when the reaction of the patient demands caution. Care must be taken to avoid traumatic myelitis. This operation results in paralysis of the abdominal muscles and is certainly the most formidable and time-consuming of those proposed for hypertension.

Subdiaphragmatic splanchnicectomy is a bilateral operation and should be done in two stages. It is carried out with the patient in the kidney position. A hockey stick incision is made just lateral to the erector spinae muscle extending downward and forward over Petit's triangle just above the crest of the ilium. The external and internal oblique and the transversus abdominal muscles are divided. The twelfth rib is resected subperiosteally. The subcostal ligament of the twelfth rib is then incised, allowing upward retraction of the intercostal vessels and nerves and affording good exposure of the splanchnic nerves and lumbar ganglia. The liver and perinephric fatty capsule are displaced forward. The peritoneum and its contents are carefully protected. Gentle dissection reveals first a splanchnic trunk composed of major, minor and lesser splanchnic nerves, which are about 2 cm. in length and end in the celiac ganglion. The resection includes a few millimeters of this ganglion together with the splanchnic nerves. The first and second lumbar ganglia are exposed and removed with the intervening trunk. Adson combines this procedure with resection of the outer or distal one-half of each adrenal gland. This operation interferes with ejaculation in the male, and also sympathectomizes the lower extremities with resulting vasodilatation and absence of sweating.

Bilateral splanchnic resection by the intrathoracic extrapleural route proposed by Smithwick is performed as follows. The inner inch of the eleventh rib is resected, together with the corresponding intercostal vessels and muscles. The three splanchnic nerves together with the lower portion of the thoracic sympathetic trunk, the tenth to the twelfth dorsal, are widely resected. The bilateral resection should be carried out in two stages. This procedure may be performed with equal facility in fat or thin individuals, carries little risk and disability, and is followed by no unfavorable sequelae. The resection is largely preganglionic and probably denervates the adrenal glands as effectively as any other operation. Smithwick believes that "from the point of view of technical facility, this operation has obvious advantages over the lumbar subdiaphragmatic approach, and is anatomically and physiologically equally sound."

These various procedures have been equally encouraging in the way of relieving severe subjective symptoms and in lowering the blood pressure in approximately one-half of the cases. It is too early, however, to decide whether the reduction in blood pressure is lasting and whether there is actually prolongation of life.[137]

13. *The Carotid Sinus Syndrome.* In 1933 Weiss and Baker[63] demonstrated that an abnormally sensitive carotid sinus mechanism can be responsible for recurrent attacks of syncope and convulsions. They were able to reproduce such attacks by pressure over one carotid sinus. The attacks of unconsciousness, with or without convulsions, may occur at intervals varying from days to months. An attack is often preceded by sensations of dizziness, weakness, ringing in the ears or epigastric distress. Unconsciousness lasts from one to three minutes, and the patient usually feels well after recovery except possibly for some headache or dizziness. The attacks may be related to sudden movements of the head or neck, or to pressure upon the latter. Often fatigue or emotional upset may bring on an attack. For purposes of diagnosis the attack can be reproduced with regularity by mechanical stimulation of the carotid sinus. Blocking of the sinus with procaine abolishes the effects of stimulation. The response of the carotid sinus in epileptics is normal.

Three separate mechanisms for the attacks of syncope have been recognized:[138, 139]

(1). Vagal reflex, resulting in slowing of the heart;

(2). Vasomotor reflex, resulting in a fall in blood pressure independent of the heart;

(3). Cerebral reflex, which may cause syncope and convulsions without significant alterations in the blood pressure or pulse rate.

Treatment. The vagal reflex can usually be abolished by suitable doses of atropine. Judicious use of ephedrine and epinephrine may control the vasomotor type of reaction. The cerebral type, however, is not benefited by drugs.

In the case of the cerebral reflex, or in those cases with the vasomotor or vagal reflex when drug therapy has not been successful, a very high proportion of cures may be expected from surgical denervation of the carotid sinus.

Carotid sinus denervation as described by Munro[138] may be carried out in the following manner. A 3 inch incision is made along the anterior border of the sternomastoid muscle, with its center opposite the cricoid cartilage. The platysma and superior cervical fascia are divided. The sternomastoid muscle is retracted laterally, exposing the upper end of the carotid sheath. The internal jugular vein is retracted medially and the common carotid is exposed by dividing the sheath. The internal and the external carotid arteries and the bifurcation are then exposed and stripped. The stripping should include the intercarotid tissue and the adventitia all the way around both carotid trunks for a distance of 2 cm. above the bifurcation. Care must be taken to avoid injury to the carotid artery.

Generally a unilateral operation upon the most sensitive side is adequate, but in some instances a bilateral procedure must be done for complete relief.[138, 140-142]

14. *Miscellaneous.* Recent observations indicate that an appropriate sympathectomy may be a useful adjunct also in the treatment of facial paralysis,[143] of vasospasm associated with acute arterial embolism[144, 145] and of certain types of renal pain.[146] In another considerable group of conditions for which such operations have been proposed careful clinical and physiological appraisal of the results has been discouraging.[5, 40, 51, 78] Among these are bronchial asthma, cord bladder, bladder pain, epilepsy, spastic paraplegia, cardiospasm, peptic ulcer and retinitis pigmentosa.

In view of the vital and pervasive influences of this physiological system the progress to date which has been recorded herein can be regarded as barely more than a beginning. With the active interest and intelligent effort which is now so generally in evidence, however, it is only reasonable to anticipate further important achievements.

Summary

1. *Anatomy.* The autonomic nervous system is an aggregation of nerves and ganglia which have been displaced from the central nervous system for the purpose of governing the involuntary activities of the body. The essential unit of this system is the visceral reflex arc consisting of three elements: (1) a visceral afferent fiber, (2) a visceral efferent preganglionic fiber, and (3) a visceral efferent postganglionic fiber. The sympathetic ganglia, trunks and rami provide the paths for intersegmental communications.

2. *Physiology.* The autonomic nervous system is divided into the thoracolumbar or sympathetic division and the craniosacral or parasympathetic division. Most structures innervated by the autonomic nervous system receive from the two divisions a parallel supply having opposite functions. The antagonistic effect is emphasized by the response to drugs.

3. *Historical.* Jaboulay, Leriche, Jonnesco, and Hunter and Royle were the pioneers in the development of the surgery of the autonomic nervous system.

4. *Clinical.* The disorders which have responded to surgical procedures upon the autonomic nervous system are as follows:

(1) Raynaud's Disease and Sclerodema.
Upper Extremity: Preganglionic dorsal sympathectomy.
Lower Extremity: Lumbar sympathetic ganglionectomy.

(2) Thrombo-angiitis Obliterans.
Upper Extremity: Preganglionic dorsal sympathectomy.
Lower Extremity: Nerve crushing, or Lumbar sympathetic ganglionectomy.

(3) Essential Hyperhidrosis.
Upper Extremity: Preganglionic dorsal sympathectomy.
Lower Extremity: Lumbar sympathetic ganglionectomy.

(4) Chronic Rheumatoid Arthritis: Vasospasm and sweating.
Upper Extremity: Preganglionic dorsal sympathectomy.
Lower Extremity: Lumbar sympathetic ganglionectomy.

(5) Infantile Paralysis: Vasospasm and sweating.
Upper Extremity: Preganglionic dorsal sympathectomy.
Lower Extremity: Lumbar sympathetic ganglionectomy.

(6) Erthrocyanosis associated with Chronic Chilblains.
Lumbar sympathetic ganglionectomy.

(7) Traumatic Vasomotor Neuroses and Causalgia.
Upper Extremity: Preganglionic dorsal sympathectomy.
Lower Extremity: Lumbar sympathetic ganglionectomy.

(8) Idiopathic Megacolon.
Both sexes: Bilateral lumbar sympathetic ganglionectomy, or
Females: Resection of the superior hypogastric and inferior mesenteric plexuses together with a left lumbar sympathetic ganglionectomy.

(9) Dysmenorrhea.
Resection of the superior hypogastric plexus (presacral nerve).

(10) Pelvic Malignancy.
Resection of the superior hypogastric plexus.

(11) Angina Pectoris.
Paravertebral alcohol injection, first four dorsal segments; left or bilateral.

(12) Essential Hypertension.
Extensive bilateral hrizotomy, or
Bilateral subdiaphragmatic splanchnicectomy combined with resection of the lower thoracic trunk and first and second lumbar ganglia, or
Bilateral extrapleural intrathoracic splanchnicectomy combined with resection of the tenth or the twelfth dorsal ganglia.

(13) Carotid Sinus Syndrome.
Unilateral or bilateral resection of the carotid sinus nerve.

(14) Miscellaneous.
Facial paralysis.
Vasospasm associated with arterial embolism.
Certain types of renal pain.

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THE PRODUCT OF A HOSPITAL

Some thirty years ago, Dr. E. A. Codman advanced the claim that the results of the work of a hospital should be considered with the same attention as is given to the product of a manufactory or other business enterprise. On one side of the ledger is the expense per day's treatment; on the other the results of treatment as indicated by the proportion of patients who recover.

During the past thirty years the cost per day of hospital treatment has increased steadily up to three and a third times the earlier figure. Breaking down the statistics into ten year periods, the greatest increase appears in the 1919-1928 decade, during which the daily cost of treatment doubled. In this decade there was a slight increase in the proportion of surgical cases, a regular increase in the work of the pathological laboratories, a regular increase in the number of out-patients. The number of patients per resident was unchanged; the number of patients per nurse diminished by 25%, indicating a proportionate improvement in nursing care. In the same period there was an extension of scientific methods of diagnosis, and a great expansion of the X-ray and physiotherapy departments.

In spite of the improved methods of diagnosis and treatment, the improvement in nursing, diminished maternal mortality, and freedom from the mortality of diphtheria, typhoid fever and the diarrhoeal diseases of childhood, some of our hospitals now show no such improvement in mortality statistics as would seem to justify the increased expense of hospital treatment. We offer as a topic for discussion the question as to whether these hospitals should be fairly judged by the height of their buildings, the magnificence of their operating equipment, the number of their X-ray machines, the extent of their laboratories, or by their success or failure in the treatment of disease.

ARTHUR HUDSON HARRINGTON, A.B., M.D.

An Appreciation

WALTER LEE MUNRO, M.D.
413 LLOYD AVENUE, PROVIDENCE

In the death of Dr. Arthur Hudson Harrington, formerly Superintendent of the State Hospital for Mental Diseases, on Sunday, March 12, 1939, the State of Rhode Island lost one of its foremost citizens, one of its wisest and most far-seeing humanitarians.

Dr. Harrington was one of Nature's noblemen. Erect, dignified, always immaculately groomed, courteous, even courtly in his bearing, kindly, sympathetic and tolerant in his dealings with others, whether of high or low degree, he invited their confidence and commanded their respect. He was, withal, one of the most modest of men.

Love of music was the one enduring passion of his life. A brilliant pianist and organist, a fine baritone singer, no mean composer, he found in music rest when weary, relaxation when overwrought, exaltation when depressed, consolation when in sorrow, soothing and contentment at all times. It was but natural that, in his professional career, he should discover in music a potent remedy for the relief and cure of those who were ill in mind.

Born in Worcester, July 25, 1856, educated in the public schools, prepared for college in Worcester High school, he entered Brown University in 1875 with the class of '79. After receiving his A.B. he began the study of medicine and won an M.D. from Jefferson Medical School in 1882. Locating in Providence, he engaged in private practice, but, after two years, followed his natural inclination and took up institutional work at Danvers State Hospital where, as Assistant Physician, he laid the broad and deep foundations of his knowledge of psychology and psychiatry.

In 1894 he was selected for the position of Medical Director at the Bridgewater State Farm where many insane criminals were confined. During his four years stay at Bridgewater he was chiefly instrumental in converting it from a purely custodial penal institution into a true hospital, under the name of Massachusetts State Asylum for Insane Criminals, of which he became Superintendent.

Dr. Harrington returned to Danvers as Superintendent in 1898, retaining this position until 1903, when he resigned. On the death of Dr. W. A. Gorton in May 1899 he had been offered, but declined, the superintendency of Butler Hospital. Both at Danvers and at Bridgewater he had gained much practical experience in planning, designing, constructing and furnishing buildings for the insane which was to be of incalculable value to him in after years.

Immediately after leaving Danvers, Dr. Harrington became Superintendent of the New York Eye and Ear Infirmary where his business ability, sound practical judgment and strong commonsense enabled him to eliminate in one year the deficit under which the hospital had been laboring, which had threatened to cause the closure of the whole institution with the exception of the outpatient department.

Life there was comparatively easy but it was not Dr. Harrington's chosen field, so when an opportunity offered for a return to Psychiatry as Superintendent of the Rhode Island State Hospital for the Insane, he was prompt to seize it. He accepted the position with his eyes open to its difficulties, with no illusion as to what was before him. He must have felt much as did Hercules when confronted with the task of cleansing the Augean stables, but he had always before him a vision of what the hospital *could* be and what he hoped to make it. He accepted the appointment as a challenge to his mettle and endurance.

When he assumed charge at Howard, the institution was almost wholly custodial and was viewed with dread and aversion by possible patients and their families. The meagre support it received from the State was grudgingly given. Its physical plant was wretched. There was but one modern building, the Congregate Dining Hall. Most of the rest were 40 years old, one story, wooden pavilions, without underpinning, cold draughty, unsanitary in the extreme. The few brick wards, in which many patients were locked in their rooms at night, had no masterlocks; in case of fire the attendants would have had to go down the long corridors, unlocking each door separately, to release the imprisoned patients. It was God's mercy that the State had for so long escaped a terrible holocaust. As if these conditions were not, in themselves, bad enough, there was great overcrowding.

With such a plant, the morale was inevitably low; there could be no esprit-de-corps on the part of physicians or attendants. Patients were com-

mitted by the courts under the same form or procedure employed with criminals. Day by day they were admitted; but no histories were taken, no records worthy of the name were kept, no clinics for examining, discussing or diagnosing cases were held. Orders were given to allow no public officials, legislators, nor physicians to go about on the wards for fear of their starting an investigation.

All this was changed as rapidly as possible but the march of improvements was necessarily slow. Legislators, state officers, city officials and the whole Rhode Island Medical Society were invited out to Howard and conducted over the plant, often by Dr. Harrington himself, in order to show them how inadequate, behind the times and positively bad the conditions were. An up-to-date card index and systematic records were established, and clinics, which all the doctors were required to attend, were regularly held. Publicity and tireless, tactful diplomacy were brought to bear on the legislature and the old State Board of Charities and Corrections; but appropriations came in driblets. Progress, however, has been made. The morale and discipline both of physicians and attendants were infinitely improved. The decrepit wooden shacks were torn down as rapidly as the old brick wards could be remodeled, renovated and modernized to house the patients. They were always overcrowded so that hundreds were obliged to sleep on cots and mattresses on the floors in the open wards, which fact was fully publicized by Dr. Harrington in the daily papers.

It was at this time of stress and hard work with meagre results that Dr. Harrington told the writer, quite casually, that he had received an invitation to go back to one of the Massachusetts hospitals, an institution fully equipped and in good running order, where the remuneration was much higher. On being asked whether he would accept the offer, he said, "No, I came here to build up this hospital and my work isn't finished yet." He never again alluded to the subject.

The first *new* building to be constructed was the Reception Hospital, which was opened in May, 1912. Dr. Harrington had taken the leading part in planning it; had visited many other institutions in search of new ideas. The result was a building so completely arranged throughout that psychiatrists and building committees from other States came to Howard in search of information and guidance in building. For the first time since returning to Rhode Island Dr. Harrington had something in which he could take pride. He had shown his skill and imagination in remodelling old buildings so as to secure the greatest possible housing capacity, but the Reception Hospital was different; it was *new*, it was a *creation*.

One feature of the new building was a well-appointed and well lighted operating room; there had been none of any sort previously. Dr. Harrington organized a voluntary staff of surgeons and specialists who responded at any time to calls for aid. In the basement he installed a well-furnished laboratory, and a complete outfit for physiotherapy. It was at this time (about 1912) that the training school for nurses was started, with the double purpose of improving the nursing personnel of the hospital itself, and providing competent care for nervous and mental cases in the community.

In 1916 one of the old brick structures was remodeled into an administration or office building, which, with its substantial furnishings and separate offices for the Superintendent and his assistants created a much more business-like atmosphere and seemed quite palatial compared with the old makeshift quarters. Sorely as new dormitories were needed, none were built until 1928.

Apathy and indifference on the part of the legislature could defer the material part of the Superintendent's program, but in the finer, more spiritual essentials, great progress was being made. At his suggestion the title of the institution was changed from State Hospital for the Insane to State Hospital for Mental Diseases; a small matter, one might think, but of tremendous psychological significance to patients, their friends and the public. It removed at once much of the stigma attached to being treated within its walls.

A State-wide social service was initiated. Clinics were held for the examination of positive or borderline cases, at Pawtucket, Westerly, and other places from time to time, thus beginning a service roughly similar to that now conducted in the Psychopathic Department of the Charles V. Chapin Hospital.

Occupational therapy in all its forms was introduced, adapted in each case to the capacity and needs of the individual.

For years a small orchestra had furnished music at noon and night in the Congregate Dining Hall where one thousand men and women, on opposite sides of the hall, ate together. Great care was taken to see that the music program was progressively quieting and soothing.

Dr. Harrington, with his love and intimate knowledge of music, had long felt that, properly directed, it could be made a powerful therapeutic agent in treating the insane. He now had a wonderful chance to test his theory.

Believing from early experience that technical instruction in music would be of little interest or value to the great majority of his patients, he devoted all his attention to mass or chorus singing. For several years he personally directed the work. Begun with a small, selected group, hardly any of whom could read music, his new departure was hailed with delight by the singers, and doctors and nurses noted in many of them marked improvement in their mental and emotional attitudes. Snatches of song began to be heard upon the wards and about the grounds. The number in the choir, which was made up exclusively of patients, increased gradually until it reached about fifty, both men and women. The institution came to be spoken of as the "singing hospital." With the choir as leaders, many of the inmates joined in with the result of producing such a volume of spontaneous, heartfelt congregational singing as is seldom heard. Every one of the thousand patients who could sing, joined in.

When the burden of training the choir, in addition to all the Superintendent's other duties became too heavy, the Penal and Charitable Commission was prompt, in view of the results obtained, to appoint a musical director.

It became the rule after meals on Sundays and holidays to hold the whole congregation in their places for an hour of song.

The Congregate Dining Hall is both large and lofty and the little four-piece orchestra was pitifully inadequate to lead such a volume of sound. Dr. Harrington felt the need of a powerful pipe-organ and determined to have one. With the ready consent and cooperation of the State Public Welfare Commission, he set out to raise the $10,000 needed without calling upon the state treasury for aid. October 15, 1925, the whole choir was taken down to the WJAR studio to broadcast a concert while Dr. Harrington made his first radio appeal for contributions from the public. It was a great evening in the lives of the singers, most of whom had not seen the city for many a day.

The drive for funds was successful and a fine, large and thoroughly modern pipe organ was purchased and installed in the singers' balcony. Dr. Harrington's pamphlet entitled "The Story of the State Hospital Pipe-Organ" aided very materially in the campaign. So widely diffused in the pyschiatric world was the news of these achievements in musical therapy that Dr. Harrington was invited to participate in a "conference and discussion on painting, drawing and sculpture produced by patients in a mental hospital," which was to be held at Paris, France, in 1930. He responded with a masterly paper entitled "Music as a Therapeutic Aid in a Hospital for the Insane," which was translated into French and published in "Archives Internationales de Neurologie" in Paris.

The organ was dedicated Sunday, May 16, 1926 with brief literary exercises and a fine musical program.

In October, 1926, with everything at the Hospital running smoothly, Dr. Harrington, having passed his seventieth birthday, resigned, but was at once made Superintendent Emeritus and retained, and frequently called into service as a consultant.

He continued to be active in the Rhode Island Society for Mental Hygiene of which he was a founder and past president, and in the Rhode Island Medico-Legal Society. He was on the active staff of the Psychopathic Department of the Charles V. Chapin Hospital. He contributed many papers, mostly on the housing, care and treatment of the mentally ill, to various technical journals.

His memberships included the Providence Medical Association, the Rhode Island Medical Society, of which he was a past president, the American Medical Association, American Psychiatric Association, New England Society of Psychiatry (past president), Boston Society of Psychiatry and Neurology, R. I. Society of Neurology and Psychiatry (past president), The University Club, and D.K.E.

He is survived by a son, Dr. Clifton W. Harrington of Everett, Mass., and a daughter, Mrs. Ethel St. John of Shrewsbury, Mass.

Ironically enough, the vision which years of planning, working and hoping had not been able to materialize, was made real by a major depression accompanied by much human misery and the loosening of Uncle Sam's purse strings. Dr. Harrington lived to see and take part in the erection of the finest and most complete plant of its kind in the country. Twenty-two new buildings, covering almost every possible need, were constructed.

Sunday after Sunday for many months Dr. Harrington had sat down with Dr. Arthur P. Noyes, the superintendent, picturing and planning the new hospital plant as he would have built it if he had

been given the opportunity. No detail was too small to be considered as they discussed and drafted plans for the new institution which Dr. Harrington had long envisioned.

"So when the State was given, suddenly and petulantly, by the Federal Government, two weeks in which to present plans for the use of a previous four million dollar gift to the State, or the sum would be withdrawn, architects were pressed into service under Dr. Harrington's urging. Only with all the earlier forethought and then the instant decision and carrying through could the twenty-two buildings have become possible." This incident was typical throughout of Dr. Harrington's foresight and initiative.

* * * * *

With comparative leisure after his retirement came the opportunity to realize some of his life's ambitions. In 1928, together with the writer, he enjoyed a long-deferred three months' tour of Europe.

No one, not even his closest friends, had dreamt that this busy, practical, hard-headed executive and psychiatrist had in his mind poetical visions and fantasies which he longed to record in verse. His theme had gradually taken shape; his imagery was borrowed in part from old Norse mythology. As the work grew it became a sequence of four poems in heroic verse, which were to be accompanied by some twenty interpretative musical scores. The title of his work is "Everlasting Life." Beginning with the Ice Age it tells the whole story of the origin of life on this planet and its annual ebb and flow with the recurring seasons. The text was completed recently but when Dr. Harrington died there still remained some pages of the music to be written.

Death came just as he would have had it. For about three years his health had been failing and he had made several stays in the hospital. This winter especially he had been out comparatively little, but for two weeks preceding the end he had been feeling well and happy.

On Sunday, March 12, Dr. Harrington had been about the house and in good spirits all day. In the early evening, after reading his completed poem to some friends in the house, he sat down at the piano and began playing one of his own scores, but had played only a few bars when he complained of feeling sick, lay down upon his bed and in two or three minutes passed away. He had really died at the piano with his beloved music.

No pain, no suffering, no lingering sickness. Just Rest and Peace!

MEMORIAL HOSPITAL

REPORT OF A CASE OF DISSECTING ANEURISM OF THE AORTA

JOHN F. KENNEY, M.D.
209 BROADWAY, PAWTUCKET

Name: Mrs. G. G. S.

Occupation. Housewife.

Age: 40.

Admitted. October 1, 1938.

Discharged. October 13, 1938.

Condition on discharge. Dead.

Revised diagnosis: Dissecting Aneurysm of the Aorta.

Pregnancy: Abnormal, low forceps, vertex, R. O. A. (normal female infant).

The patient was admitted to the admitting office with the following history:

Chief complaint: Substernal pain.

Present illness: Patient is a 40 year old primiparous gravida II, mother of one eight year old boy who is living and well, born spontaneously at full term. Patient is now believed to be nine months pregnant.

Pregnancy has been apparently normal and uneventful until today.

Patient ate a large relatively undigestible meal at noon today and was apparently perfectly comforable until 6:00 P. M., when she suddenly became aware of severe pain, starting in head and travelling rapidly down neck to substernal area. There was a sensation of severe choking and substernal pressure, vomiting occurred five to six times, producing portions of the noon meal. Patient was unable to lie or sit down due to dyspnea. There was a sensation of increased gas on stomach with some relief by belching. No history of gastro-intestinal or cardio-respiratory symptoms.

Family history: Mother dead ? cause. Father living, paralysis in both legs for ten years. One sister living, at mental hospital. One brother died, rheumatic fever. No known history of diabetes, cancer, tuberculosis, cardiac, renal, gastro-intestinal or vascular disease.

Marital history: Nine years. Husband living and well, age 50. One child living and well.

Past history: No known history of severe illness or fracture. Amputation of both small toes for hammer toe, 25 years ago. Nocturia x 3. Frequency every 2 hours. Fluid intake and food intake large. No dysuria, incontinence or hematuria.

Catamenia: 26-30 days/5 days/moderate flow with some discomfort. Last period January 1, approximately.

Habits: No alcohol; no tobacco; no medicine.

Physical examination: Abnormally large skeletoned white female, age 40, showing dyspnea, cyanosis, orthopnea, marked apprehension, restlessness,

cold dry skin and complaining of severe substernal pain. Abdomen is enlarged, consistent with a nine months' pregnancy.

Heart: Not enlarged, slow and regular. Blowing systolic and diastolic murmurs over the entire precordium, loudest over second right and third left interspaces. No friction rub heard.

Lungs: Clear and resonant throughout with equal bilateral respiratory excursion.

Abdomen: Enlarged, symmetrically consistent with 9 months pregnancy. Patient complains of substernal pain but exhibits no mid-epigastric tenderness or splinting.

Progress notes: Patient was given morphia gr.¼ and atropine 1/150 s. c. stat. and admitted to the Obstetrical Ward with the diagnosis of coronary occlusion and medical service to follow case with obstetrical service. Dr. John G. Walsh from the Obstetrical Service examined the patient, pronounced patient's condition very grave and should be given expectant treatment regarding her pregnancy. Blood pressure on admission was 50/30.

An electrocardiogram taken on October 2, 1938. No definite conclusion of coronary could be made. An electrocardiogram taken October 5, 1938, showed a diphasic Q. R. S. and an inverted T-4, rhythm regular, rate 90.

Complete electrocardiogram on October 6, 1939:

Rate approximately 140.

Rhythm essentially negative but slight variation due to tacchycardia.

P. R. .14
Q. R. S. .04
Q. R. S. I diphasic
Deep Q I
T I inverted with tendency to high take-off.
T 2 plus minus
T 3 plus
T 4 plus

Comparison with the previous tracings showed further change, essentially inversion of T-wave in lead I with prominence of Q I. Also a marked increase in rate. Findings were definitely consistent with coronary occlusion.

Blood count on admission: Hgb. 65%, R. B. C. 4,400,000, W. B. C. 16,500, Neutrophiles 91%, Lymphocytes 8%, L. M. 1% Repeated blood counts showed essentially no change in the hemoglobin or red cell count; the white count dropped to 10,000.

Blood Chemistries:

		10/3/38	10/11/38
Urea Nitrogen	mg. per 100 cc	29.42	53.71
Creatinine	mg. per 100cc	2.0	1.9
Sugar	mg. per 100 cc	81.	133.

Wassermann was negative for cholesternized and acetone antigens. Hinton was negative. Urinalysis on admission was light yellow; acid; specific gravitiy 1.024; three plus albumin; negative sugar and acetone; sediment two plus leucocytes, one plus R. B. C., two plus hyaline casts. Daily urine examinations remained approximately the same as the original specimen.

October 2, 1938: Patient appeared in less distress than when admitted. She appeared to be very restless and talkative.

October 4, 1938: It was difficult to keep the patient quiet. She appeared to be very uncooperative. Hearts sounds of fair quality and a double murmur which had not changed intensity of character.

October 6, 1938: A portable examination of the chest showed the entire right lung field to present a hazy mottled appearance. These changes were also present in the left upper lung, whereas, the left lower lung field presented a more homogeneous haziness. The heart was apparently considerably enlarged. The findings were consistent with congestive changes in the lungs with possibly a small amount of fluid at the left base associated with a large dilated heart. A portable examination of the abdomen showed marked gas distension of the small and large intestine. The pelvis, however, showed no gas collections and presented a homogeneous shadow which possibly corresponds to a postpartum uterus.

*October 6, 1938: T*he patient delivered with a maximum of four hours labor; low forceps used to hasten delivery. Cyclopropane and ether used during the second stage. Patient appeared to be in considerable distress. However, within a half hour after delivery, she appeared somewhat improved and about as well as before the onset of labor.

October 8, 1938: Portable re-examination of the chest showed congestive changes throughout the right lung field. The changes appeared to be slightly more marked now in the right upper lobe, whereas, the right lower lobe appeared to be somewhat better aerated. The left chest showed a slight but distinct clearing, although the costophrenic sinus was still obscured. The heart was still enormously dilated.

October 9, 1938: Apparently no improvement. She presented moderate edema beginning at the ankles and legs. The dyspnea was somewhat increased. Patient had been complaining of gas in the stomach whenever she took any small amount of liquid.

The temperature was 99 on admission, remained about the same and dropped to subnormal, 97. For two days after delivery remained between that and 98 and two days preceding death elevated to 101.

The pulse was 80. After the third day, it rose to 100 and on the 9th day rose to 130, and remained between 110 and 130 until death.

The respirations averaged from 25 to 30 throughout the course.

The blood pressure on the second day after admission went up to 120/70, remained approximately at this level until the date of delivery and then dropped to 80/30; then went up to 130/60 and the day preceding death, the blood pressure was 110/45.

On the evening of October 12, 1938, the patient's condition became very poor, went into coma and died at 3:45 A. M. the following morning.

An autopsy was performed on October 13, 1938. Autopsy notes are as follows: "Body is that of a large white female exhibiting an unusually large skeleton. The hair is light brown in color, fine in texture and plentiful. The skin on the face has almost an icteric tinge. The skin of the body is pale white. There is a marked blotchy appearance to the upper one-third of the chest and generalized dependent lividity. Rigor mortis is moderately generalized. Pupils are markedly dilated. Lips are cyanotic. The breasts are firm, somewhat pendulous, not abnormally large. The abdomen is symmetrical and protrudes in the midline both above and below the umbilicus. There is no abnormal tympany or dullness. There is a four plus edema of both ankles extending half-way up the lower leg. The small toe on each foot is missing. There is a signet ring on the ring finger of the right hand and a wedding ring on the ring finger of the left. Y-shaped incision extending from both clavicles to the sternum thence to the symphysis pubis was made revealing one inch of bright lemon-colored fat. The abdominal organs were seen to be distended especially the colon. The uterus was subinvoluted extending about 3 fingers above the symphysis in the midline. Upon opening the pleural cavity a right hydrothorax was noted in which there was approximately 500 cc of clear watery-like fluid. There was no noted fluid in the left pleural cavity. Both lungs were normal greyish-red in color. Upon examination of the right lung, it was noted that the lung was heavy. There were no areas of consolidation. However, upon section and gentle pressure, a frothy fluid exuded from the cut surface. This fluid was generalized both in the base and the apex. The left lung was also very heavy. There seemed to be an area of compression at the lower lobe due to pressure from the heart. Upon section at the left base, the same frothy fluid noted in the right lung exuded. The right apex was clear. Heart: The heart was enormously dilated both on the right and the left side, the apex lying mostly in the axilla. The heart was removed in the ordinary manner, the pericardium being opened revealed 100 cc of clear strawcolored fluid. The right and left ventricles are now seen to be markedly dilated. There is a marked visible dilatation at the base of the heart, an area about the size of a fist, which appears like an auricle. There are punctate hemorrhages into its entire wall. Upon opening the heart, marked dilatation of the pulmonary artery was noted with some antemortem adherent clots attached to one of the leaflets of the pulmonary valve with an abundant postmortem clot propagated upon the end of the antemortem clot. The right ventricle is markedly dilated. The surfaces are smooth. There is no evidence of infarct of any of the muscle walls. The left ventricle is markedly dilated. Upon opening it, a clear smooth, shiny surface is revealed. The mitral valve is markedly dilated and all along its surface are small greyish vegetations, evidence of an old rheumatic condition. The aortic valve is dilated and from under the surface, on the aortic side, of one of the cusps appears an antemortem clot which when removed revealed a small opening. A probe was inserted into this opening and revealed it leading to a large saccular dissecting aneurysm about 3½" in length. About 1½" up the aorta appeared a transverse slit on the internal wall of this aneurysm where it had ruptured inward. Upon exploration of the aneurysm, it was found to extend up the right subclavian artery for about 2½" where it ended in a blind pouch. Upon exploration around and downward over the arch of the aorta, it was found that this dissecting aneurysm went along posteriorly all the way to the branching of the common iliac. There is present throughout the aneurysm an organized antemortem clot which is adherent to the wall on all sides. Upon examination of the aorta below the diapragm it was found that there was an area about 7" in length in which there is an almost continuous arteriosclerotic plaque. This material gives the appearance of being calcified but the aorta itself is very friable. The coronaries were examined and there is a small plug in the lower end of the left coronary with a graying of the external surface of the heart muscle. It was concluded that there was not a complete occlusion but rather a marked narrowing. Spleen is enlarged slightly. It cuts with moderate resistance. The surface is dark red in

color. The normal markings are present throughout. Liver slightly enlarged in size, of normal color and upon section reveals no gross pathology. Intestines markedly dilated but no gross pathology is noted. Pancreas negative. Adrenals negative. Kidneys: The right kidney appears somewhat enlarged and upon its surfaces are two cysts, one reddish color and the other pale. Upon opening of the cysts, gelatinous material exuded. The cortex is of normal thickness. The markings of the kidney are well seen. The left kidney is somewhat enlarged. The capsules strip easily and, upon sectioning, reveal some sclerotic changes. Uterus large, and firm, being in the state of involution. The right uterine tube is distended. Upon the posterior surface of the uterus, there is a large area of dilatation of the veins with hemorrhages extending on each side into the broad ligament. Upon sectioning it, the muscle wall of the uterus shows no gross pathology.

Anatomical Diagnosis

1. Dissecting Aneurysm of the Aorta.
2. Coronary Sclerosis.
3. Right Hydrothorax.
4. Pulmonary Edema.
5. Arteriosclerosis of the aorta and both kidneys.
6. Pericardial Effusion.
7. Old Rheumatic Infection of the Heart.
8. Antemortem Thrombus of the Pulmonary Artery.

Knowing that Dr. Burton E. Hamilton of Boston was very much interested in this type of case, Dr. Walsh asked his opinion and after seeing the case agreed that this was possibly a coronary occlusion with the possibility of an aneurysm and has since reviewed the entire case, autopsy, and with particular reference to the electrocardiogram gives the probable explanation that there was a partial obstruction of the left coronary and that possibly a large quantity of the patient's blood went into the aneurysm, therefore, out of the circulation, severe hemorrhage producing a relative coronary circulation insufficiency.

Cases in the literature of aneurysm developing during pregnancy are not very common. Dr. Hamilton called my attention to a report by Dr. T. Shennan on "Dissecting Aneurysms" of the Medical Research Council of London.

There are several features recommending the reporting of this case in full: (1) the observation of the patient by the visiting men and by the Out Patient Department monthly; (2) the sudden onset; (3) the age of the patient; (4) the fact that she was not hypertensive or syphilitic; (5) the ability to go through labor and obtaining a live child; (6) and that in the postmortem examination, there was found an aorta so friable that it is almost impossible to conceive the fact that it had not ruptured entirely down to the pelvis.

RHODE ISLAND SOCIETY FOR NEUROLOGY AND PSYCHIATRY

The Rhode Island Society for Neurology and Psychiatry met April 10, 1939, at the John M. Peters House, Rhode Island Hospital. The meeting was called to order by the President, Dr. Walter C. Weigner, at 8:40 P. M. The minutes of the last meeting were read by the Secretary and approved. The Secretary reported to the Standing Committee recommending the applications of Dr. Lawrence A. Senseman and Dr. Charles Rupp for membership in the Society. It was moved and voted that the report of the Standing Committee be accepted and that Dr. Senseman and Dr. Rupp be elected members of the Society. There being no other business the clinical program for the evening was presented.

Dr. E. F. Gildea presented the "Relationship of Vitamin Deficiencies to Neurological and Psychiatric Problems." Dr. Gildea discussed some of the important conditions arising from lack of Vitamins in diet, stressing particularly treatment. He pointed out that it is necessary to check the actual food eaten rather than the apparent diet; that in severe conditions the dose of vitamin may need to be huge in order to get results, as 20cc. of liver extract five times a day in certain cases of pellagra. In some types of diet to which the patient may be accustomed it seems that the higher the number of calories taken the greater the amount of vitamin necessary, particularly in cases of large amounts of "purified" grains. He pointed out that where the "B Complex" is lacking it may be necessary to use all known members of the "complex" to get results. Several case histories were given illustrating technique in management. The presentation was followed by general discussion after which Dr. Gildea replied to questions presented by members present.

Dr. P. W. Preu of Yale Medical School of New Haven presented a paper on "Sypmtomatic Psychoses with Special Reference to Bromide Intoxications." General discussion followed the presentation and was closed by Dr. Preu.

The meeting was adjourned at 11:10 P. M.

Respectfully submitted,

NILES WESTCOTT, M.D., *Secretary*

OBITUARY

DANIEL S. LATHAM, M.D.

Dr. Daniel S. Latham, a member of the Providence Medical Association, died of a heart attack at his home, 678 Park Avenue, Auburn, on September 21, 1938.

Dr. Latham, the son of Samuel Dexter Latham and Mary Ellen Stevens Latham, was born in Auburn, Maine, January 4, 1867. He was educated in the public schools of Portland and Falmouth, Maine, and graduated from Bowdoin Medical College in 1893, interning at Rhode Island State Institutions, 1893-4. In October, 1894, Dr. Latham located at Auburn (Cranston), R. I. On December 24, 1895, he was married to Margaret E. Moulton of Falmouth, Maine.

From June, 1899, to January, 1912, Dr. Latham served as Health Officer. In January, 1915, he was again reappointed and remained in office until his death.

Dr. Latham was a member of the Rhode Island House of Representatives in 1907 and a member of the Rhode Island Senate, 1908, 1909, 1910. From January, 1908, to April, 1936, he was Medical Examiner, District 2, County of Providence.

At the time of his death he was Superintendent of Health, City Physician, and Director of the Cranston Bureau of Milk Inspection.

Dr. Latham was a member of Deering Lodge, A. F. & A. M., Portland, Maine; Presumscot Lodge, I. O. O. F., Falmouth, Maine; Wayland Lodge, N. E. O. P.; American Medical Association; American Public Health Association; Rhode Island Medical Society; Rhode Island Public Health Association; Health Guild of America; Providence Medical Association; Rhode Island Medico-Legal Society (Past President); Providence Clinical Club (Honorary Member); Children's Friend Society of Providence; Cranston District Nursing Association.

As Medical Examiner for more than twenty-five years he was regarded as one of the ablest in the State. He was a witness in some of the most notable murder cases tried in the Rhode Island courts.

Dr. Latham was a general practitioner of medicine for forty-four years, doing an extensive practice in addition to his numerous public duties. He was very much beloved by his patients and a host of good friends in Cranston and Providence. He was the typical general practitioner of the old school, kind, gentle, and thoughtful with his patients; yet in his capacity as Superintendent of Health and in giving several hours each day of his services to the Board of Health in Cranston, he kept abreast of the time and with the advances in medicine.

He is survived by his widow, Margaret E. Moulton Latham; a daughter, Mildred M. Latham; and a son, Donald S. Latham.

ARTHUR T. JONES, M.D.
P. WILLIAMS, M.D.

BOOK REVIEW

PRECLINICAL MEDICINE, Preclinical States and Prevention of Disease. By Malford W. Thewlis, M.D., A William Wood Book, 206 pages and 24 Pages index, cloth, $3.00. The Williams & Wilkins Company, Baltimore, 1939.

In this book Dr. Thewlis has condensed within 182 pages his views on anthropology as it relates to disease, on preventive medicine, and one early diagnosis and treatment of many important diseases. In other words he has made a bold and original attempt to cover the field of medicine of the future, the maintenance of good health. This type of writing is the most difficult that there is, and if one is inclined to criticise the work in certain details, one should realize that as Dr. Johnson said of the dog walking on his hind legs, "You are surprised to find it done at all."

A comparatively small part of the work is taken up in consideration of types of individuals and the relative susceptibility of these types to certain diseases. This is an extremely interesting study and the author has evidently given it a great deal of thought. The reviewer is not able to pass judgment on the present practical value of this field of observation, but obviously it is very promising for the future.

The material on preventive medicine proper, the field which would be covered in a work on public health, is sound and thorough. Dr. Thewlis emphasizes certain points more than this reviewer would. For instance in tuberculosis he gives especial attention to inherited predisposition and susceptible types. On the other hand he covers adequately the means of transmission of the disease and the significance of the first infection.

He evidently has had a sustained interest in allergy and one wishes that he had been able to use more space on this subject.

The whole book shows great individuality with expression of personal opinions and yet also is obviously based on wide reading and scholarship.

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4. Nephritis	21
5. Cerebral Hemorrhage	15
6. Auto Accidents	2

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	Cases	**Deaths*
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*Further Clinical Observations on Feeding Infants Whole Milk, Gelatinized Milk, and Acidified Milk. C. Loring Joslin, M.D., F.A.A.P.; Bulletin of the School of Medicine, University of Maryland; Jan. 1939.

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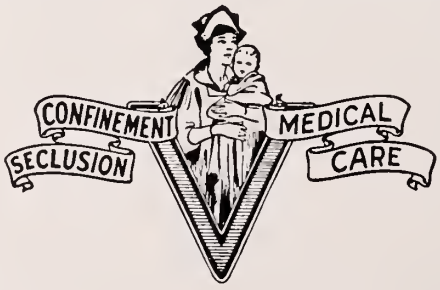
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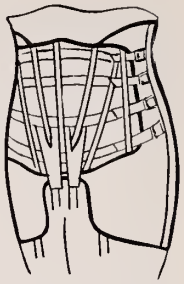
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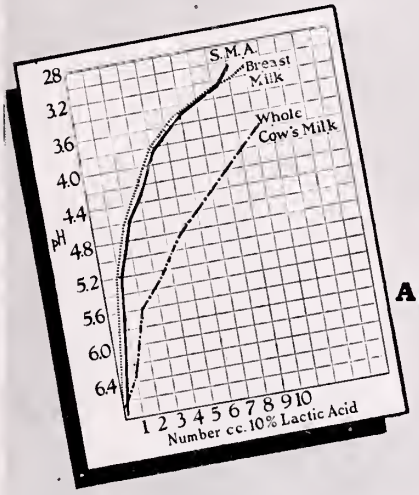
Why

S.M.A. FED INFANTS SHOW EXCELLENT NUTRITIONAL RESULTS

NOT ONLY IS THE ANALYSIS LIKE BREAST MILK

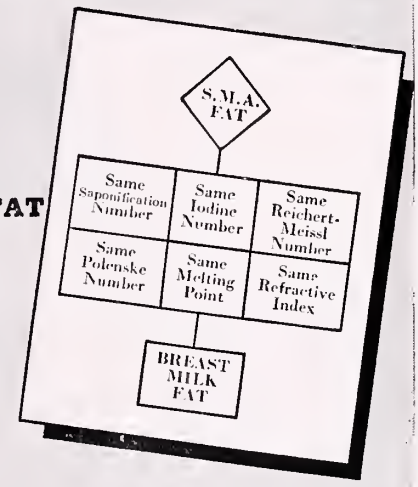
COMPARATIVE ANALYSIS OF S.M.A. AND BREAST MILK

Chemical and Physical Analysis	S.M.A.	Breast Milk
Fat	3.5-3.6%	3.59
Protein	1.3-1.4%	1.23-1.5
Carbohydrate	7.3-7.5%	7.57
Ash	0.25-0.30%	0.215-0.226
pH	6.8-7.0	6.97
Δ	0.56-0.61	0.56
Electrical Conductivity	0.0022-0.0024	0.0023
Specific Gravity	1.032	1.032
Caloric Value: —per 100 c. c.	68.0	68.0
—per ounce	20.0	20.0



AND THE BUFFER LIKE BREAST MILK . . . .

BUT FAT OF S.M.A. IS LIKE BREAST MILK FAT

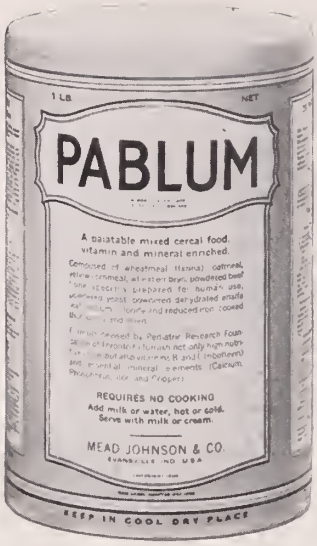


In Addition S.M.A. is an antirachitic and antispasmophilic food—has a Vitamin A, B, and D content in each feeding that is *constant every month of the year.* It is usually unnecessary to feed any vitamin supplements other than orange juice.

S.M.A. is a food for infants—derived from tuberculin tested cows' milk, the fat of which is replaced by animal and vegetable fats including biologically tested cod liver oil; with the addition of milk sugar and potassium chloride, altogether forming an antirachitic food. When diluted according to directions, it is ESSENTIALLY SIMILAR TO HUMAN MILK *in percentages of protein, fat, carbohydrate and ash, in chemical constants of the fat and in physical properties.*

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	Mg. per Oz.	
	Iron	Calcium
PABLUM	8.5	221.0
Beets	0.67	6.8
Carrots	0.17	13.1
Peas	0.50	8.0
Spinach	1.13	21.8
String Beans	0.27	14.2
Tomatoes	0.12	3.1

Peas
1/17 as much Fe,
1/27 as much Ca
as PABLUM



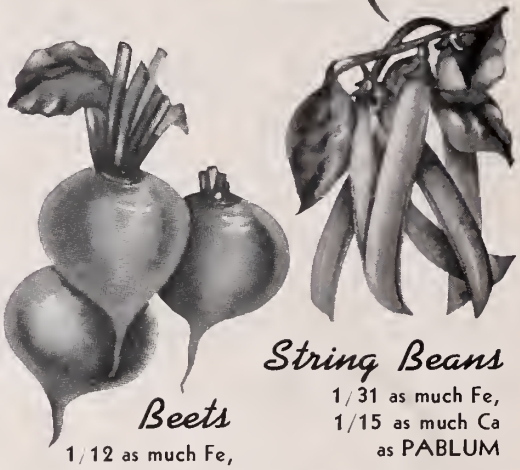
Tomatoes
1/70 as much Fe,
1/71 as much Ca
as PABLUM



Carrots
1/50 as much Fe,
1/17 as much Ca
as PABLUM



NOT only does Pablum have a higher iron and calcium content than vegetables but, most important, clinical studies of children have demonstrated that in Pablum these minerals are in available form. Investigations by Stearns and Stinger, Schlutz, and Cowgill show that even such an iron-rich vegetable as spinach did not increase iron storage in the body, in fact, caused a loss in some instances. A factor responsible for this difference may be the higher content of *soluble* iron in Pablum—7.8 mg. per oz. Then, too, the water in which Pablum is cooked (by a patented process) is dried with it, whereas the cooking water of vegetables is usually discarded, with its valuable content of minerals and vitamins. Stearns reports difficulty in feeding spinach in sufficient quantities to affect the iron balance of children. Spinach and other highly flavored vegetables are often difficult to feed. Pablum, on the other hand, is a palatable cereal that can be fed as early as the third month, and for older children it can be varied in dozens of appetizing dishes. Recipes and samples available on request of physicians.



String Beans
1/31 as much Fe,
1/15 as much Ca
as PABLUM

Beets
1/12 as much Fe,
1/32 as much Ca
as PABLUM



Spinach
1/12 as much Fe,
1/10 as much Ca
as PABLUM

Pablum consists of wheatmeal (farina), oatmeal, wheat embryo, cornmeal, beef bone, brewers yeast, alfalfa leaf, sodium chloride and reduced iron

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THE RHODE ISLAND MEDICAL JOURNAL

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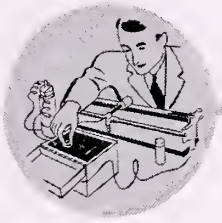
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UPJOHN

Tablet Production

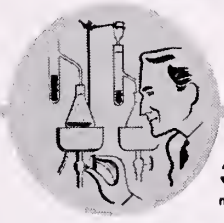


1 ASSAY OF MATERIALS—Before occeptonce for use, all drugs must beor the mark of approval of the control laborotory. Chemical, biologic and physical tests insure that drugs of only the highest quolity are used.



2 WEIGHING AND MIXING—The weight of eoch ingredient in the formulo is checked ond rechecked before it is added to the mixture.

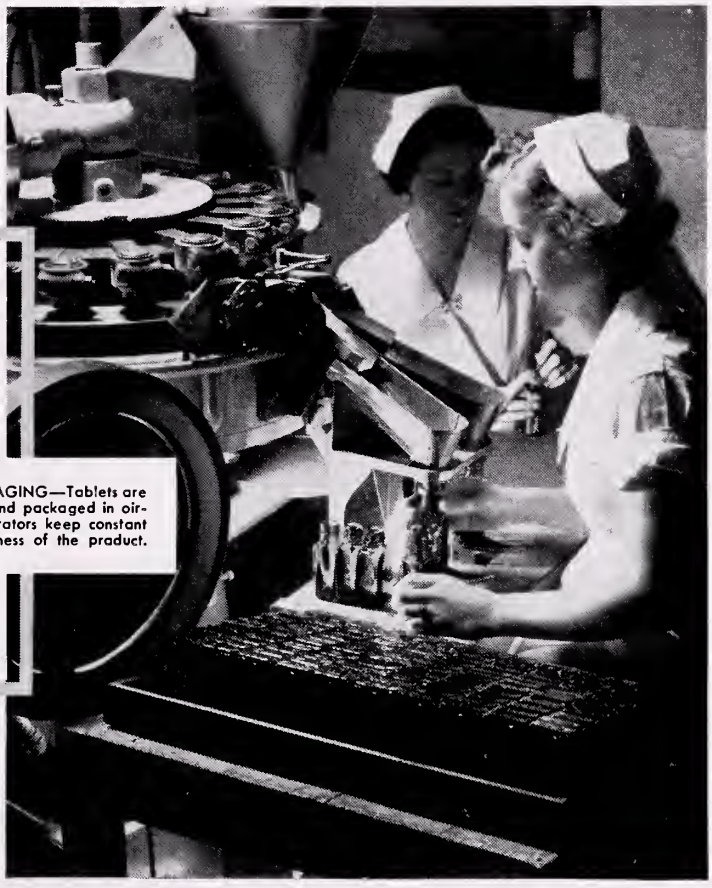




3 CONTROL—After thorough mixing, and before further production, somples of the mixture are assayed.

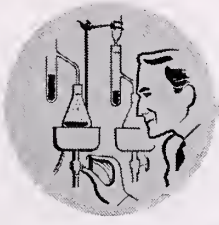
4 GRANULATION—A moistening agent farms the mixture into granules. After air conditioned drying, these are carefully sized to insure unifarmity of weight ond appeorance of finished tablets.





5 CONTROL—The granules ore ossoyed in the control loboratary to calculate the exact weight of material required for each toblet.

6 COMPRESSING AND PACKAGING—Tablets are autamatically compressed and packaged in oir-conditianed roams. Skilled operators keep constant check on the weight and firmness of the praduct.



7 CONTROL—A final ossay is made before the finished toblets are released. This checks their potency, uniformity ond physicol properties.

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CANNED FOODS AS PROTEIN SOURCES

● The primary function of protein in foods is that of a building material essential for tissue growth and maintenance. In 1897, Rubner postulated that all proteins are not of equal value in nutrition (1). Since that time, considerable attention has been directed towards the establishment of the types and amounts of protein required by man.

Chemical and biological investigations have demonstrated that different proteins may vary widely in both chemical composition (2) and ability to satisfy the nitrogen requirements (1, 3) of various animals. Of the twenty-odd amino acids which have been isolated from proteins (4) arginine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine have been shown to be essential in mammalian nutrition. The biological value of a protein is in reality a measure of its ability to supply those amino acids essential for tissue building and repair which the animal cannot synthesize (5) from material "ordinarily available" at a rate sufficient to meet body demands. A "complete" protein is one which will supply—or at least contains—the essential amino acids. Few proteins approach this ideal condition. Fortunately, however, a varied diet, containing proteins of both vegetable and animal origin, will usually supply all the essential amino acids which may not be supplied in adequate amounts by any one of the proteins.

As to the amounts of protein needed by men, experiments of the balance sheet or endogenous nitrogen elimination types (3,6) have demonstrated that the protein requirements of the human adult may apparently be adequately met by relatively low protein intakes. These intakes are of the order of 0.5 gram per day per kilogram of body weight. However, there is evidence (3) that development of physique and general health is favored by more liberal protein intake. Since excess of protein above the requirement for tissue repair and growth is utilized as a source of fuel, the present trend is toward more liberal protein allowances.

In infancy and childhood, suggested protein allowances (3) are relatively high, being of the order of 3 to 4 grams of protein per kilogram of body weight in infancy and gradually decreasing with increasing age until adult allowances (3, 6) of 0.75 to 1.5 grams protein per kilogram of body weight are reached. Protein allowances of the order of 10 to 15 per cent of total calories as protein calories in the mixed diet throughout the entire life cycle, appear to be satisfactory. In the formulating of a mixed diet calculated to supply optimal amounts of proteins, the canned meats, marine, dairy and vegetable products may be freely used.

During recent years, popular interest has been concerned chiefly with the more recently discovered essential food factors such as the vitamins. However, the modern concept of adequate nutrition teaches that the optimum diet should be complete with respect to all known dietary essentials, protein, of course, included. In the attainment of this objective, the hundreds of commercially canned foods of animal and vegetable origin should prove both economical and valuable as protein sources.

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(1) 1935. Nutrition Abstracts and Reviews, 4, 447
(2) 1929. The Biochemistry of the Amino Acids, H. H. Mitchell and T. S. Hamilton, Chemical Catalog Company, New York.
(3) 1937. Nutrition Abstracts and Reviews, 7, 257.
(4) 1937. J. Am. Med. Assn. 109, 2070.
(5) 1938. Annual Review Biochemistry, 7, 356.
(6) 1938. Chemistry of Food and Nutrition, Fifth Edition, H. C. Sherman, Macmillan Co., New York.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the forty-ninth in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.

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Tetanus Antitoxin Purified Globulin, Mulford, is a highly concentrated, purified and standardized tetanus antitoxin. Because of its small volume and low protein content, it is well suited for the emergency treatment of contused, lacerated and puncture wounds. It is easily injected, is rapidly absorbed and produces almost immediate protection. The small volume and low protein content also reduce the incidence of local and systemic reactions.

For ordinary wounds the immediate administration of 1,500 units of Tetanus Antitoxin Purified Globulin, Mulford, is suggested. In wounds with severe trauma, necrotic tissue or foreign bodies present, twice the usual prophylactic dose of either Tetanus Antitoxin Purified Globulin, Mulford, or Tetanus Gas-Gangrene Antitoxin Mixed, Mulford, should be given. A second dose may be administered within four or five days.

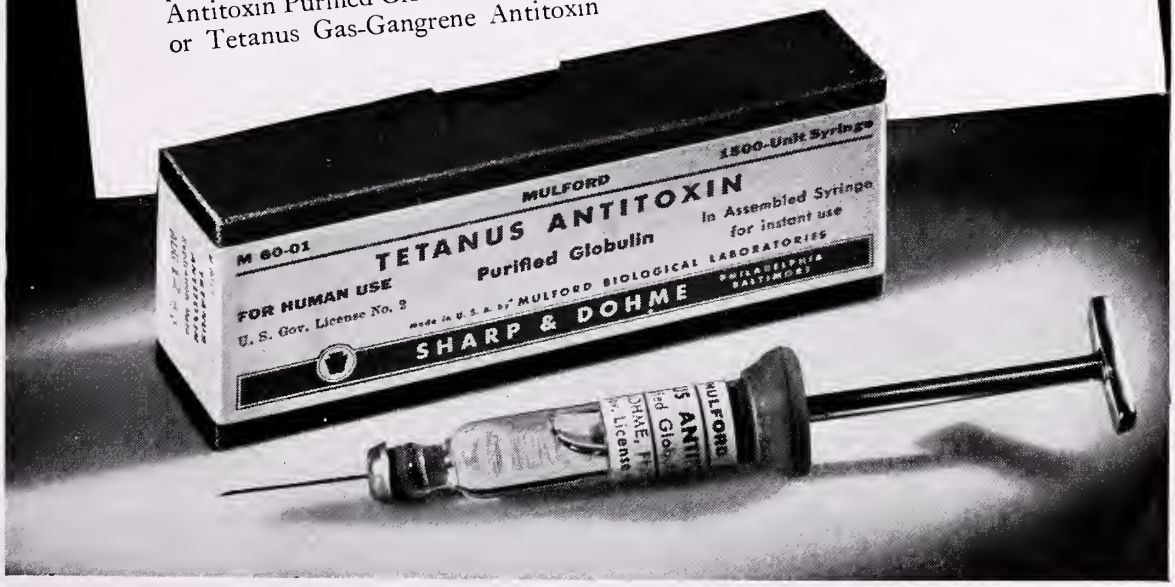
Tetanus Antitoxin Purified Globulin, Mulford, is supplied in syringes or vials of 1,500 and 5,000 units; in syringes of 10,000 and 20,000 units. Tetanus Gas-Gangrene Antitoxin Mixed, Mulford, is supplied in syringes or ampoule-vials containing 1,500 units Tetanus Antitoxin, 2,000 units Perfringens Antitoxin, 2,000 units Vibrion Septique Antitoxin.

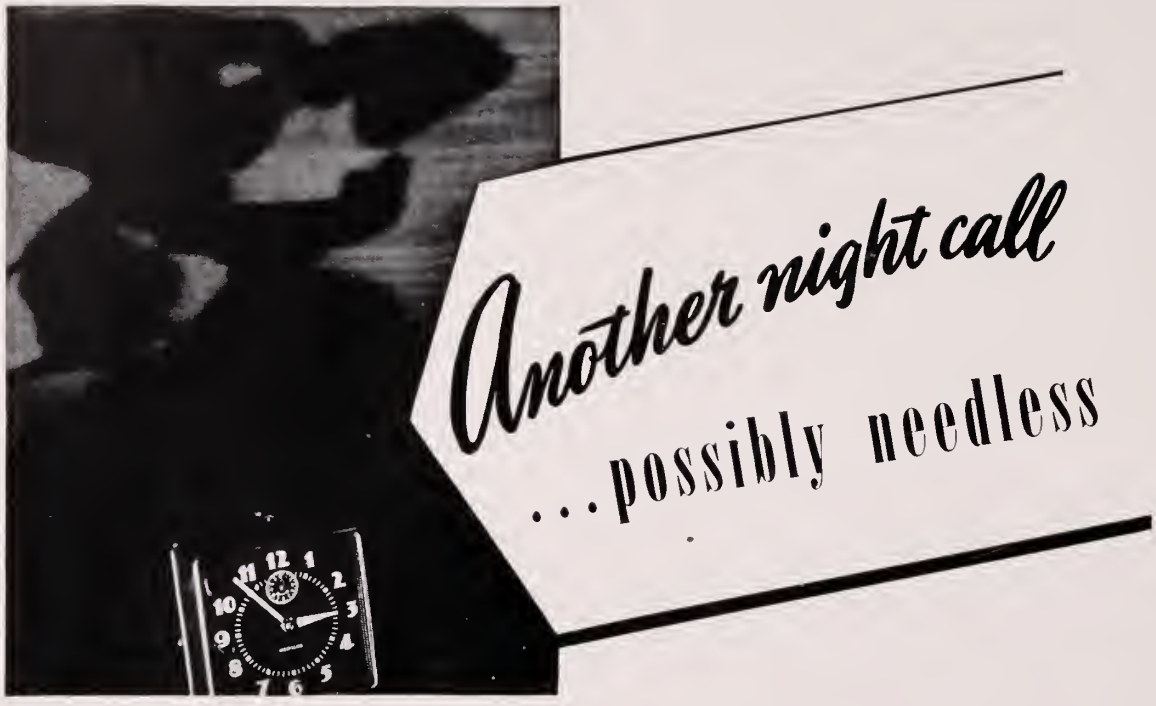
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FREQUENTLY patients become apprehensive over their failure to sleep and feel they must call the doctor. But the physician, too, needs sleep. Often the prescription of a safe, effective sedative will save an unnecessary night call.

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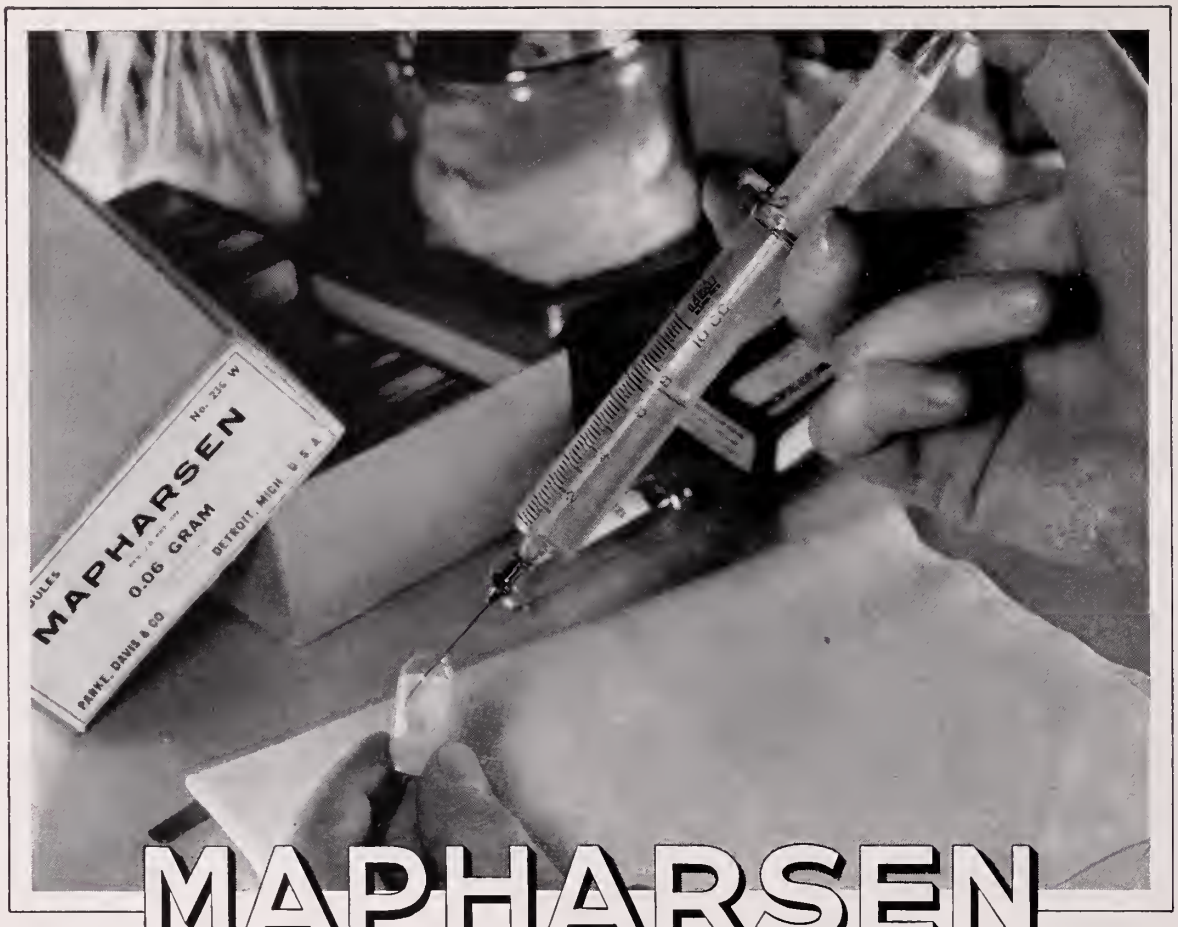
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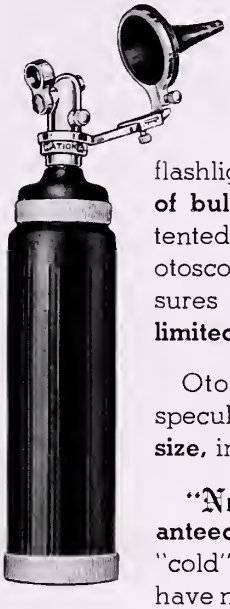
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The new, All-Molded Battery Handle is **far more attractive** in appearance—it has no paint to peel—no exposed metal parts to "short"—no plating to wear.

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THE OBVIOUS AND THE PLATITUDINOUS

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This address will deal with the obvious and the platitudinous.

A year or more ago the writer was asked by one of his colleagues to see a rather small and slender elderly woman whose only complaint was a big stomach. A big stomach in a small, slender woman is the most obvious and platitudinous thing imaginable. Her recent history revealed that some months previously a New York surgeon had removed a benign umbilical cyst. He told her that she was too fat and should reduce her weight, her stomach was too big. She consulted a physician who, she was told, was very successful in reducing big stomachs. He told her that for her height she was fifteen pounds overweight and put her on a diet which failed to reduce her weight appreciably. Her family physician was called to see her for some minor intercurrent ailment.

His examination revealed a transverse abdominal scar, absence of the navel and the aforesaid big stomach. It was obvious and platitudinous. Not being a surgeon or a specialist in obesity he had no preconceived notions as to the nature of the big stomach, and as I have said, called in the writer who removed a large ovarian cyst and by a twist of the wrist, as it were, cured the big stomach and brought the patient's weight to normal.

The moral of this McFaddenesque true story is that even the obvious and the platitudinous occasionally deserve our attention.

Through the years, especially the last fifty years, the character of the practice of medicine has gradually changed. I refer, today, not to the science or the art of curing and preventing disease but to the relationship of the individual physician to his patient, to his individual fellow practitioner, to the body of physicians usually known as organized medicine and to the state. Before the passage of medical practice acts no degree conferred by an authorized medical school was required before anyone could hang out his shingle as a physician. Even after medical practice laws were enacted, the requirements if judged by modern standards were very lax. As the requirements for a license have been stiffened at the insistance of the medical profession the various irregular cults have made successful attempts, by way of the back door, to nullify to some extent the protection of the public which the medical practice acts were designed to promote. At the time these acts became law it seemed as if the medical profession had won a decisive victory. Time has shown that while a victory, it was not decisive and that as long as the public and especially the legislators look at the right to practice medicine as a privilege conferred by the state and fail to realize that all medical legislation is designed primarily to protect the public, so long must the medical profession be ever alert to scrutinize every legislative bill that may affect the public health.

It is a far cry from the day when the state assumed no responsibility for the health of the individual citizen and very little for the public health, when quarantine was almost the sole medical function which it assumed and the actual care of the sick was left to the family or to charity. Not only does the state assume the duty of protecting the public by pure food and drug laws, by regulation of the sale of narcotic and other dangerous drugs, by compulsory vaccination, by pre-marital physical and laboratory examinations and a multitude of health measures, protective and preventive, but it has in these latter days accepted the care of the more or less indigent individual patient as one of its responsibilities. This brief summary indicates the fundamental change that has taken place in the relation of the state to preventive medicine and the actual practice of the healing art.

Equally great have been the changes in the relation between the individual patient and the individual doctor. The old family doctor who could diagnose and treat any disease was well as the next man is no myth. The body of scientific knowledge was so restricted that one man could master it. Today it is so large that no man can hope to have more than a superficial acquaintance with vast fields of medical science, which perforce have been allotted to medical specialists.

Economic necessity, fully as irresistibly as the broadening of medical knowledge, has inevitably altered the relation of doctor to patient. Well within the memory of men still in active practice the only equipment necessary for the graduate in medicine who was starting in practice was a sense of touch, one good eye, one good ear and an educated nose supplemented by a watch, a clinical thermometer, a stethoscope, a few surgical instruments, an alcohol lamp and a few test tubes and chemicals. If he was particularly well provided, he had a microscope and a blood counting apparatus. The eye, somewhat later combined with ear, nose and throat, was the only recognized field for the specialist.

With the multiplication of mechanical and laboratory aids requisite for the refinements of modern diagnosis and the constantly growing expense of physical, chemical and biological aids to treatment, the profession was forced to pool not only its knowledge but its physical equipment and the era of the specialist was upon us.

With the principle accepted that every patient, no matter what his economic status, must have the best in diagnosis and treatment the problem has become increasingly complex. Even with the pooling of resources resulting from the development of specialization, the expense of accurate diagnosis and adequate treatment is prohibitive for a large fraction of patients who cannot be classed among the indigent. Group medicine and a vast increase in the number of patients treated in hospitals resulted and was in fact a further pooling of resources in which not only the doctors but the patients themselves as represented by the public participate. And the end is not yet. More and more the practice of medicine will be dominated by organized forces outside of the profession. Up to the present time in Rhode Island at least, that domination so far as the individual doctor and his patient are concerned has been exerted predominantly by privately endowed and unselfishly administered hospitals. How beneficent for both doctor and patient that domination has been can be appreciated only if one tries to imagine what the practice of medicine would be like if suddenly all hospital facilities were wiped out. Beneficent as it may be, the rise of specialism, the concentration of diagnostic and therapeutic facilities in hospitals and clinics and the ever increasing tendency to shift the responsibility for the care of the sick to the state, have already and will continue to raise problems that must be solved, if they are to be solved wisely under the guidance of the medical profession.

As the relations of the individual physician to the state and to his patients have changed, has there been a corresponding change of the relation of physicians one to another? In the old days, when the individual doctor treated directly with his patient and his fellow practitioner, a strict adherence to the golden rule was all that was necessary for peace, justice and happiness in the cult of the healing art. Is that sufficient today? Obviously not. The status of the anesthetist, the radiologist and the pathologist, so forcibly brought to our attention in connection with the rise of hospital service insurance plans, is a case in point. The problems raised by the increasingly intricate organization in the field of medicine cannot be solved by the individual physician but must be solved by a strong organization, sometimes furthering and sometimes opposing current trends.

The medical profession throughout the country is thoroughly organized. The American Medical Association, the state medical societies and the county medical societies have been in existence so long that the medical profession has come to take them for granted and look upon them as something imposed upon them by fate — whether a beneficent or a malign fate depends upon the point of view. It cannot be emphasized too often that organized medicine is what the individual members of the profession have made it. Far from being run by a clique and failing faithfully to represent its members, it is thoroughly democratic. When the American Medical Association speaks for the profession it says what the state societies have ordered it to say. It has no voice of its own. It merely records and reproduces the voice of the state medical associations. Its governing and vocal

body is the house of delegates and the house of delegates is composed of representatives from the state medical societies which have delegated their representatives to speak for them. Any individual or group of individuals which criticises the pronouncements of the American Medical Association is criticising not the pronouncements of a small autocratic group within the profession but the pronouncements of the elected representatives of the state medical societies. It is imperative therefore that the state societies should speak only after free discussion and mature deliberation.

The American Medical Association speaks for the profession. Its critics speak as individuals. This is not to say that the American Medical Association may not at times be wrong and its critics right. Neither is it to say that no individuals or groups of individuals should criticise the pronouncements or policies of the American Medical Association. On the contrary any individual who believes that the American Medical Association is wrong, should in loyalty to the profession make every honorable effort to correct what he conceives to be a mistake. If he can persuade his own state society that a mistake has been made and through its delegate a majority of the national house of delegates his view will prevail. It is only by the road of constructive criticism that progress can be made.

The American Medical Association is often spoken of as the "parent association." It is no such thing, it is the creature and servant of the state associations.

The state associations (in this state the Rhode Island Medical Society) are the creatures and servants of the local or county societies. They can speak and act only as they are directed by the local societies through their representatives in the house of delegates. They have no voices and no initiative of their own. They must take orders; they cannot give them. They may make recommendations but cannot enforce them. The local societies are the foundation on which the whole superstructure of organized medicine is built. They are all powerful. The opposition of the medical profession to the Wagner Act as voiced by the house of delegates of the American Medical Association on May 17, is not the policy of the American Medical Association as such but rather is the policy of the county medical societies as voiced by their duly elected representatives.

The opening sentence of this address was a threat that it would deal with the obvious and the platitudinous. I think I have made good that threat. One more platitude and I am through with generalizations.

The Rhode Island Medical Society throughout its history of one hundred twenty-eight years has fostered high professional ideals and been an inspiration to self-improvement among its members in the art and science of healing. This building is a silent witness to the unselfish labors of past members most of whom are no longer among us. The library which it houses testifies to the scholarly ideals of past and present members. Its reading room shelves are stocked with the leading magazines of this and foreign lands. Throughout its long life it has unselfishly approved and promoted any movement which, in its judgment, would promote the public health or further the scientific attainments of its members. But times have changed. No longer can we practice medicine, shaping our relations with our patients and our fellow practitioners with no other guide than allegiance to our Hypocratic oath. No longer is the state content to leave us to our own devices, trusting to our interest in the public welfare and our devotion to our patients. The increasingly complex organization of modern society must inevitably affect the medical profession and if it is to be a leader and a guide in medical affairs, organization must be met by organization that as a militant body it may wield an influence that as individuals it can never hope to wield.

First in importance is a better understanding on the part of the constituent societies of the functions and potentialities of the state society. As has been pointed out, the local societies are the foundation on which the whole superstructure of organized medicine is built. From them must come the inspiration and initiative. Only thus can the work of co-ordination by the state society be effective. From Westerly comes a plea for a medical lien act. From Pawtucket a protest against the treatment of accident cases among W.P.A. workers in government hospitals. These and similar matters from other societies are proper subjects of consideration by the state society. The Providence Society, it seems to me, has pointed out one way by which greater co-operation by the local society may be accomplished. At the invitation of their president, the presidents and secretaries of all the other societies

met and discussed various problems that confront the state society. It was a very stimulating meeting. I suggest that a committee on co-ordination be appointed to consist of the presidents and secretaries of the constituent societies and the president, vice-presidents and secretary of the state society to meet at least twice a year, once in the early Fall and once in the late Winter or early Spring. At these meetings suggestions from the local societies could be entertained and problems which came up for discussion transmitted to the local societies by their own representatives. More intelligent discussion in the local societies would result from such a procedure than from a formal communication sent by the secretary of the state society.

During the last year the Committee on State Policies of Public Health made a strenuous but unsuccessful attempt to have a Doctor of Medicine with a degree of Doctor of Public Health and experience in public health work appointed State Director of Public Health. The Legislative Committee worked hard to have a Basic Science Law enacted by the Legislature. It was passed by the Senate but died in the House Judiciary Committee done to death by the political pressure brought to bear on the politicians by the osteopaths and chiropractors. There would seem to be but one answer to the question why the medical profession, though out-numbering these cults nearly ten to one, fail year after year to overcome their opposition to any measure of which they disapprove. They are organized and we are not. There should be committees in each local society corresponding to the committee of the state society who could be called upon to co-operate with the state society in bringing pressure to bear on their local senators and representatives. Pressure from back home is the only really effective pressure.

Effective organization means continuity of policy and effort. The president changes every year. Unless my own experience is unique, it takes him a year to learn what it is all about. In the past, continuity has been attained by continuing the secretary in office as long as he would consent to serve. In the good old days this sufficed. While serious problems occasionally had to be solved, for the most part his chief duties consisted in sending out routine notices, seeing that the president appointed committees at the proper time and getting speakers for the scientific meetings. If he had a secretary in his office she could do all the necessary clerical work for him with little or no expense to the society. Any effective campaign which the society may undertake whether legislative or educational entails an amount of work which cannot be done without more clerical assistance than has heretofore been available. Recently the worker who has been engaged in making a catalog of the library was dropped by the W.P.A. which had been paying her salary. Funds were available in our treasury to retain her in her present position and her services as a clerk are now available to the society. We hope that with this assistance available, the secretary may be relieved of some of the routine details of his office and his available time spent in more constructive work. She can be of great assistance to the various committees upon whom most of the actual work of the society devolves. The editor of the Journal has urgently needed assistance which such a secretary can give. The Journal is also in need of financial assistance which it has never had from the society. A few dollars invested might be returned in profits from increased advertising. It probably is a wise policy to keep sufficient funds in the treasury to meet unpredictable emergencies but after all the society collects its dues to be spent for the benefit of the society and I for one, do not believe that if a serious emergency arose the members would not meet that emergency. I refuse to believe that the spirit of loyalty and co-operation that is expressed in this building and the library that it houses is dead. If it is, the society does not deserve to survive.

Be that as it may, there is no gainsaying the fact that the work of the society is limited by its lack of funds. Telephone calls, correspondence, typed reports which go to the secretaries of the constituent societies, mimeographed reports which should go to the individual members all take money as well as time. The only two ways by which our income may be increased are by increasing the membership or increasing the dues or both, probably both. Many members of the local societies are not members of the state society. All should be. The present dues are insignificant as compared to club dues or labor union dues. I do not know what the American Medical Association has spent in protecting its members from political assault but I venture to say that it is picayune as compared to the C.I.O. contributions in the last presidential campaign.

This is not the place to discuss the details of how our income shall be increased. The final responsibility is the council's.

I have pointed out that the state society is the creature and servant of the local society. Whatever the local societies demand be done, it must do. The local societies speak through the house of delegates and the council. The house of delegates for the past year at least has been almost if not quite inarticulate. The reason is not far to seek. The notice of the meeting states that the council will meet at four-thirty; the house of delegates at five. The council meets behind closed doors, deliberates and adjourns whenever the spirit moves. The house of delegates is called to order, not at the appointed hour of five but at five-thirty or later. The minutes are read, the treasurer makes his report. Interesting and highly important committee reports are read. All this is proper, necessary and enlightening but by the time the item of new business is reached it is getting on toward seven o'clock. The members who have made the effort to come from Westerly, Newport and Woonsocket have cooled their heels in the reading room for perhaps an hour waiting for the council to adjourn. By the time the routine business has been finished, any initiative, any desire to start something has died and the meeting adjourns. The house of delegates and the council should not meet on the same day.

One more suggestion and I am through. The constitution sets a specific date on which the annual meeting of the council and the house of delegates and the date on which the scientific meeting shall be held. This year our secretary was unable to be present at the annual meeting of the council and house of delegates. He was in St. Louis representing this society. Inflexibility in the date of the scientific meeting hampers the committee in getting desirable speakers. A change in the constitution giving the committee more latitude in this matter is desirable.

I have brought to your attention the needs of the society at this meeting which has no power to act upon them because I believe that only by acquainting the individual members of the society with the problems which confront us can those needs be met. That this society has not had prophetic vision and planned its campaign against the assaults upon the profession by hair brained and irresponsible political reformers is obvious. There has been an occasional prophet of evil but they have been voices crying in the wilderness. We need not blame ourselves too bitterly for that is always true of prophets. Now that the emergency is upon us the profession is awake. The presidential address of the one hundred twenty-eighth meeting of the Rhode Island Medical Society is a plea that it shall assume its full responsibility in the fight that is ahead of us; that it shall not sit back expecting the American Medical Society to do its fighting for it. It is a plea also that the local societies be not content merely loyally to support the state society as they have always done in the past, but move vigorously to stimulate it to more effective effort.

PHYSICIANS AS ARTISTS

"From time immemorial, medicine and art have been closely associated. The same skill that makes the surgeon's fingers deft with scalpel and ligature is at work in the beautiful examples of sculpture and carving shown in this book. The eye that so quickly and accurately evaluates the gradations in color and texture between normal and pathologic tissues coordinates the hand that wields the painter's brush. The man who chooses medicine as his life's work is largely motivated by a love for his fellow man, else he would select a vocation offering greater monetary reward. From the beginning, he is trained to exercise his powers of observation, and in time develops imagination, sympathy, understanding, philosophy and reverence, all of which are the very essence of art. Morever, he deals with that most exquisite form of divine art and beauty, the human body.

"At the least, every physician is able to develop a sensitiveness to and an appreciation for fine art. He can also cultivate a hobby which if not one of the fine arts, is in the class of 'work by the side of work.' Dr. Charles A. Dan, who has always stressed the value of cultural medicine, has advised: 'Be a collector, for example, of stamps or automobiles, or old books, or neckties or pins; or find diversion in some collateral branch of science; the lore of birds, of fishing and shooting. Make a garden or cultivate shrubs and flowers. These kinds of activities will make your life happier and your professional character more attractive and effective.' "

— quoted from "Parergon," published by Mead Johnson & Company, Evansville, Ind. Free copy available on request.

THE TREATMENT OF PNEUMOCOCCUS PNEUMONIA WITH SULFAPYRIDINE

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Not since the time of Ehrlich has chemo-therapy received such a stimulus as when Dogmak in 1935 announced a new chemo-therapeutic agent. This agent he found effective in the treatment of experimental streptococcal infections in mice and also moderately effective against pneumococcal infections, particularly those due to type III. His original preparation was an azo dye called Streptozon or Prontosil. Other workers found that the activity of the drug was due to the part containing the O=S=O radical. This fraction, which was separated, was called Sulfanilamide. Various other related compounds were tried by other workers but were discarded because of their high toxicity. Kolmer in 1937 tried various pyridine compounds with favorable results in streptococcal infections but not as good as when sulfanilamide was used.

Since sulfanilamide was put on the market, scattered reports have been appearing in the literature concerning its effectiveness in pneumococcal infections, but these results have not been startling. In the spring of 1938 an article appeared in the Lancet[1] concerning a new drug for treating pneumococcal infections. The preparation had been found by two English workers, Ewins and Phillips, to be the most effective, of a group which they had studied, in the treatment of experimental pneumococcal infections. The drug was called M & B 693, Dagenan or 2 (P-amino-benzene sulfanamide) pyridine. Whitby,[1] who reported the experimental work, found it to be therapeutically active in mice against pneumococcal infections, particularly types 1, 2, 3, 5, 7, and 8. Since that time clinical reports have appeared in English literature and more recently in the American literature.

This drug has a formula in which pyridine has been combined with sulfanilamide. One of the H's has been replaced by a pyridine radical. It is a white crystalline almost tasteless powder, soluble in water at ordinary temperatures to approximately one part in 1,000. The drug, according to Whitby[1] and Wein,[2] has a low toxicity for animals. Whitby[3] in a later article stated that, in spite of its relative insolubility, the drug was rapidly absorbed, even more rapidly than sulfanilamide, but it was excreted somewhat more slowly than sulfanilamide. In the same article he stated that the maximum blood level was obtained in twelve hours, that the blood contained no drug twenty-four hours after treatment had ceased but the urine contained traces for forty-eight hours. Long[4] does not agree with Whitby[1] in all of these statements. He thinks that the low acute toxicity for animals results from the fact that very little of the drug is absorbed. Also that the drug is irregularly absorbed in man and animals and in comparison with sulfanilamide is more slowly and less well excreted. He found that concentrations in the blood following a single dose are better sustained than with a comparable dose of sulfanilamide.

The bulk of the drug seems to be excreted through the kidneys in two forms, free and acetylated. Long[4] found that on a single dose of .05 to 0.10 grams per kilo of body weight, 39-79% the drug was excreted in the urine in from 3-4 days. Barnett[5] et al recovered 54-59% in the urine in a patient on a constant intake of the drug.

The drug seems to be able to pass freely into the body fluids from the blood stream; it has been found in high concentration in them. Long[4] stated that from ½-¾ of its concentration in the blood may be found in spinal fluid or exudates. Barnett[5] seems to think that it remains for a long time in these body fluids.

Once in the blood stream a certain percentage is changed, apparently by the liver, into an inert compound, by a process of acetylation. Both the free and acetylated forms are found in the blood and urine. The two forms are determined by the same colorimetric methods as for sulfanilamide. The amount of the free form found in the blood by various workers has varied from a fraction of a mgm. to 23 mgm. % However most of these workers feel that the blood level is of no significance in predicting the outcome of the infection. This is due to the fact that just as good results have been obtained with low levels as with high ones. With the usual dosage employed levels of from 3-6 mgms. % are obtained. Thus it differs from sulfanilamide where at least 10 mgms. % is necessary for good results.

From the Medical Service of the Memorial Hospital, Pawtucket, R. I., John F. Kenney, M.D., Chief.
Read before the Pawtucket Medical Association, April 20, 1939.

The mode of action of the drug as in the case of sulfanilamide has not been definitely settled. Whitby[1] states that the drug acts by bringing about degenerative changes in the capsular material of the pneumococci. Telling and Oliver[6] believed that they confirmed this. Fleming[7] and Long[4] have been unable to find specific changes in the capsules of pneumococci observed in peritoneal exudates. These workers noted that multiplication of susceptible organisms is hampered both in vivo and in vitro following administration of sulfapyridine to mice or on culture media. Fleming[7] showed that sulfapyridine added in vitro, in concentrations that could be obtained therapeutically, would greatly increase the killing power of normal blood against pneumococci and streptococci. Similar observations were observed by Lockwood.[13]

Evans and Gaisford[8] reported the first clinical results, in the Lancet, in 100 cases of pneumonia with a similar number as controls. They, however, did not specify the type of pneumonia, lobar or broncho, neither did they type the organism nor confirm the diagnosis by X-rays. They had a mortality rate of 8% in the treated cases and 27% in the controls and concluded that the drug had a beneficial effect on the course of the disease. Dyke and Reid[9] reported eight cases of lobar pneumonia with no deaths and drew the same conclusions.

Barnett et al[5] used the drug on forty infants at the St. Louis Children's Hospital who had pneumonia. They felt that, although there was no reduction in the mortality rate, the rapid drop in temperature and the rapid clinical improvement was not the usual picture of the pneumonic child.

Flippin et al,[5] in the same journal, treated 100 pneumococcal pneumonias with excellent results. These cases showed rapid drop in temperature and rapid clinical improvement. Their mortality rate was 4%. They concluded that the drug was an effective agent in the treatment of pneumococcal pneumonias and that if the drug is used carefully it is a therapeutic agent with a satisfactory margin of safety.

Anderson et al[10] had a series of 50 cases and 50 controls. They had one death in the treated series and eight in the controls. They drew similar conclusions.

Agranat et al[11] used the drug in a large series—280 cases treated with the drug and 270 as controls. In the treated series there were 10 deaths compared to 27 deaths in the control group. They concluded that, when the drug was used, the pyrexial period was much shorter, clinical course milder and the period of convalescence was reduced.

Wilson et al[12] had 35 treated cases and 35 as controls all in children or infants. There were no deaths in either series. However they concluded: 1. The drug apparently shortened the course by approximately 3-4 days. (Temperature fell earlier and clinical recovery was earlier.) 2. No correlation between blood level and effect, but that 4 mgms. level is therapeutically adequate. 3. Blood level varies with the individual and the dosage. 4. Drug is of apparent low toxicity. 5. No difference in time of X-ray clearance in either group. Other diseases caused by pneumococci and other organism have been treated with this preparation. Barnett[5] treated eleven cases of bronchitis, because of contact with pneumonia cases or because pneumococci were found in the aural discharges. All cases showed a rapid fall in temperature and rapid clinical improvement. He also had two cases of pneumococcic empyema both of which showed rapid drop in temperature, decreased toxicity and general improvement. He thought that the fluid thickened more slowly than usual and found that the cultures remained positive for pneumococci. Thoracotomy was necessary for cure.

He also treated one case of pneumococcal peritonitis with recovery, three cases of pneumococcal meningitis with two deaths and one recovery, one case of pneumococcal pericarditis with recovery but felt that the drug was of questionable value in this case. One case of sub-acute bacterial endocarditis had clinical improvement, with normal temperature and sterilization of blood stream fairly quickly and patient still alive at time of writing. Two cases of influenzal meningitis died while receiving the drug. In his miscellaneous group which included staphylococcal infections, dystenteries and tuberculous meningitis, no beneficial results were obtained. Long[4] noted rapid sterilization of the blood in three out of five cases of staphylococcal septicemia. Dimson, quoted by Long, had a prompt recovery in a chronic meningococcemia and McQuaide treated six cases of meningococcal meningitis successfully. Durel, quoted by Long, found it to be as effective as sulfanilamide in gonococcal infections.

Since this drug is a combination of sulfanilamide and pyridine, both of which produce toxic effects, it is not surprising that toxic manifestations have

Chart I

	1	2	3	4	**5**	6	7	8	9	10	11	12	13	14	15	16	**17**	18	19	20	21	22	23	24	25	COMMENTS
Name	V. M.	F. G.	P. H.	A. B.	J. K.	E. M.	H. H.	T. M.	C. M.	E. L.	F. B.	O. P.	J. L.	S. G.	M. K.	A. B.	E. B.	J. W.	J. H.	I. C.	C. O.	L. T.	S. S.	A. R.	E. B.	
Sex	M	F	'	M	M	F	M	M	F	F	F	M	F	F	F	M	M	F	F	M	F	M	M	M	M	12 M. 11 F.
Age	15	30	40	49	38	42	39	46	60	60	54	59	79	40	65	33	59	24	59	58	13	20	25	3 mo.	7 mo.	13 to 79 Av. 43.7
Distr.	R. M.	L. L.	L. L.	L. L.	R. U. P. M. R. L.	R. U.	R. L.	R. L.	L. L. R. L.	L. L.	R. U. R. M. R. L.	L. U.	R. L.	R. L. L. L.	R. L. R. U.	R. U. R. M. R. L.	R. L.	L. L.	L. L.	L. U. L. L.	L. U. L. L.	R. U. R. M. R. L.	L. U. L. L.	R. U.	L. L.	10 equaled **(1 plus)**
Type	VIII		XXVII	I	II	VIII	II	XXXI	III	III	I	III	IV		XVIII	I	XVIII	I	VIII	III		I	II			I II III IV VIII XVIII XXVII XXXI 5 3 4 1 3 2 1 1
BL-Cult. Pos.				**I**	**II**				**III**			**III**					**XVIII**									**1 1 2 1**
Duration Before R	1	5	3	5	7	4	1	5	4	3	8	3	2	3	4	1	?	2	2	3	1	2	2	3	3	1-8 Av. 3.3
Total Dosage	295	210	225	345	195	360	230	270	225	360	225	385	225	445	700	645	195	225	160	225	465	325	325	42½	56	160-700 Av. 317
Blood Level. Sulf.									3.7 4.0	3.2 3.8		2.4 2.3	6.1	1.8 2.8 4.0	7.7 11.6	3.6 6.6	4.7				2.3 3.2	3.2 4.1	2.1 3.5			1.8 to 7.7 Av. 4.1 in 24° 2.8 to 11.6 Av. 5.2 in 48°
W. B. C. Diff.	26/88 8/50	20/89 4/50	20/88 10/48	21/90 8/60	19/90	41/80 10/	19/70 9/	12/84 7/	18/90 9/	13/33 9/	35/87 14/	**9/86** **7/49**	39/86 13/	22/86	33/86	22/85 11/	**4/82** **3.6/**		22/94		30/86 15/78	23/88	30/85 10/76	25/84	32/96	13 to 41 except Case 12 and 17
R. B. C. Hb.	**4/90** **4/70**	**4.8/80** **4.5/80**	**4.8/85** **4.4/88**	**4.8/90**	**5.5/90**	**3.9/95**	**4.2/75**	**5.2/95** **4.5/**	**4.4/90**	**3.3/90** **5.2/**	**4.2/80**	**4.6/100**	**4.1/78** **3.2/60**	**4.8/85**	**4.7/95** **4.5/90**	**4/82**	**4.2/18**				**5/95**	**4.2/85**	**4.8/90**		**3.2/65**	Slight reduction, not significant
CO_2	53			54	48		55																			No significant change
Chlorides	460	450		380	410		430																			No significant change
Toxic Manifest.	N. V.	N. V.	N. V.	N. C.	N. V. D.	N. V C.	N. V.	N.						N.												
Temp. Normal Hrs.	24	24	24	96	**24**	48	48	48	72	48	24	48	48	72 144	48	48	**48**	24	48	48	24	48	24	24	24	24° 48° 72° 72+° 7/ 11/ 2/ 1/
Total Hosp. Days	9	11	17	28		12	7	8	14	10	13		14								14	15	10	7	7	7 to 28 Av. 13

been observed. The earliest and most annoying were nausea, vomiting and severe occipital headache. These appeared promptly after the drug was administered. By crushing the tablets and giving with milk, these manifestations have practically disappeared in our small series of cases. Thermal reactions which may confuse the picture have been reported. The temperature usually falls to normal when the drug is stopped. Skin rashes similar to those seen in sulfanilamide therapy have been reported. They are usually measly in character and generalized in extent. They disappear when the drug is stopped. Cyanosis has been noted in a number of cases but is not as marked as in sulfanilamide therapy and apparently is of no clinical significance. In a few instances more serious reactions have been reported, such as granulocytopenia and hemolytic anemias; less common are acute hepatitis, anuria, hematuria and cerebral manifestations.

More recently the sodium salt of the drug has been used. It being more soluble is supposed to result in a quicker and more adequate blood level. It has been used by Barnett by rectum in a 2% solution. Marshall found that it was more toxic to mice than was sulfanilamide. We have had no experience with it.

As a result of the encouraging report of Evans and Gaisford,[8] it was decided to observe the effect of sulfapyridine in the treatment of pneumococcus pneumonia on patients admitted to the Medical Service of the Memorial Hospital, Pawtucket, R. I. from January 1, to April 1, 1939.

This report comprises a series of twenty-five cases consisting of twenty-three adult patients and two infants. Although we originally intended to observe a control group in which other treatment was used such as serum alone or in conjunction with sulfapyridine, we decided to exclude this group from our series because we wished to observe the effect of sulfapyridine in as large a group of cases as possible during the winter months. Furthermore, our preliminary observations with the use of sulfapyridine alone were so encouraging that we did not wish to deprive any patients of the benefit of this drug.

Except for two infants, the patients consisted of twelve males and eleven females. The ages ranged from thirteen to seventy-nine years, the average age being 43.7 years.

The diagnosis in each case was based on a satisfactory history together with physical, laboratory and X-ray findings consistent with pneumonia.

Ten cases or 43.5% showed involvement of more than one lobe. Most of the patients were quite toxic and appeared seriously ill.

Sputum examination revealed type specific pneumococcus in twenty of these cases, covering eight different types, divided as follows: Five type I, three type II, four type III, one type IV, three type VIII, two type XVIII, one type XXVII, and one type XXXI. In those cases in which specific type pneumococcus was not discovered in sputum or blood stream, the history and clinical evidence was so typical that we felt rather certain that we were dealing with pneumococcus pneumonia.

Five of our patients, approximately 22%, had positive blood cultures, one type I, one type II, two type III, and one type XVIII.

The patients were not seen too early in the course of their disease, the duration of illness before beginning of treatment ranging from one to eight days, with an average of 3.3 days.

The sulfapyridine was furnished through the courtesy of Merck & Company, in seven and a half grain tablets and the following dosage schedule was followed: 30 grains were administered as an initial dose, followed by 15 grains every four hours, day and night, the total dosage ranging from 160 to 700 grains with an average of 317 grains, and with the exception of four cases, the total dosage was less than 400 grains.

In the beginning, there was some difficulty encountered in administering the medication as most of four patients objected to the drug on account of nausea, vomiting and gastric distress, but when the tablets were crushed and suspended in milk, the patients found it less disagreeable and offered no objection to the medication. In general, the medication was discontinued after the temperature was normal for 48 hours.

Blood level concentrations for sulfapyridine were made in those cases indicated, twenty-four and forty-eight hours after beginning treatment. At the end of twenty-four hours, the sulfapyridine blood levels ranged from 1.8 to 7.7 mgms. per 100 c.c., the average being 4.1 mgms. per 100 c.c. At the end of forty-eight hours, the range was from 2.8 to 11.6 mgms. per 100 c.c., the average being 5.2 mgms. per 100 c.c.

With the exception of two cases, all our patients showed a leukocytosis ranging from 13,000 to 41,000 white blood cells per cubic millimeter: the differential counts showed 72% to 94% polynuclear cells. With clinical improvement, there was an expected decrease in the white blood count and polynuclear cells but in no case was there any significant alteration noted. Following treatment there was a slight but not remarkable decrease in the red blood cells and hemoglobin. CO_2 combining power and blood chlorides were done on several of our patients. There was, however, no significant or marked deviation from the normal.

Our patients showed relatively few toxic manifestations which could be attributed to to the medication. The early cases showed mostly nausea and vomiting. One case showed some delirium. The later cases, however, showed practically no toxic manifestations and were quite free from nausea and vomiting, due either to a more purified form of the drug or to a difference in the mode of administration, the medication in the later cases being suspended in milk. Cyanosis, observed in three cases, was not marked.

The response to treatment was quite dramatic in most of our cases, beginning almost immediately with clinical improvement and an associated drop in temperature and pulse rate followed by an uneventful rapid recovery. Seven cases or approximately 30% showed a return to normal temperature within twenty-four hours. Eleven or approximately 48% showed a return to normal temperature within forty-eight hours, two within seventy-two hours, and only one after seventy-two hours. There were two deaths out of the twenty-five patients. The total hospital days ranged from seven to twenty-eight days, the average being thirteen days.

Case No. 12 (Chart B). O. P. Male, age 59.
Pneumonia left upper lobe, 3 days duration, type III sputum and blood culture, extremely toxic. W. B. C. 9000/86% polys. Total dosage 386 grains, blood concentration 2.3 mg. Temperature normal within 48 hours.

Case No. 15 (Chart B). M. K. Female, age 65.
Type XVIII pneumonia right lower lobe, duration 4 days, improved within 48 hours, auricular fibrillation, responded to digitalis; sulfapyridine discontinued when fibrillation noted, and subsequent extension to right upper lobe; sulfapyridine readministered with good recovery, concentration 7.7 and 11.6 mg. total dosage 700 grains.

Case No. 14 (Chart C). S. G. Female, age 40.
Pneumonia right lower, left lower lobes, 5 days duration, sulfapyridine for 1 day, apparent improvement, concentration 1.8. Medication discontinued because no drug available at that time, subsequent temperature rise, drug later readministered and patient again showed satisfactory response, blood concentration 2.8-4.0 mg.

Case No. 5 (Chart E). J. K. Male, age 38.
Pneumonia right upper, middle, lower lobes, 7 days duration, type II sputum and blood stream, extremely toxic and appeared moribund on admission. Total dosage 195 grains, died within 24 hours. Autopsy showed involvement entire right lung and empyema right pleural cavity.

Case No. 17 (Chart E). E. B. Male, age 59.
Pneumonia right lower lobe, duration unknown, type 18 sputum and blood stream, total dosage 195 grains, concentration 4.7 mg., extremely toxic and appeared moribund on admission. W. B. C. 4,000/82% polys., showed some temporary improvement; sudden rise of temperature to 107, died within 48 hours of admission.

The following are two infants not treated on the Medical Service but seen in consultation and recommendations and observations made by us.

Case No. 24 (Chart D). A. R. Male infant, 3 months.
Pneumonia right upper lobe, 3 days duration, dosage 3¾ grains every four hours, total dosage 42½ grains. Temperature normal within 24 hours.

Case No. 25 (Chart D). E. B. Male infant, 7 months.
Pneumonia left lower lobe, 3 days duration, dosage 3¾ grains every 4 hours, total dosage 56 grains. Temperature normal within 24 hours.

Comments

As previously indicated this group of patients presented a rather toxic relatively advanced age group admitted on an average of 3.3 days after onset of illness and treated with sulfapyridine plus the usual nonspecific supportive treatment used in pneumonia. We did not encourage the use of other medications together with sulfapyridine but several of our patients received small doses of aspirin, codeine, morphine, phenobarbital and bicarbonate of soda with no apparent harmful effect. Although our patients were treated with a uniform dosage schedule, there was considerable variation in blood level concentration of free sulfapyridine due prob-

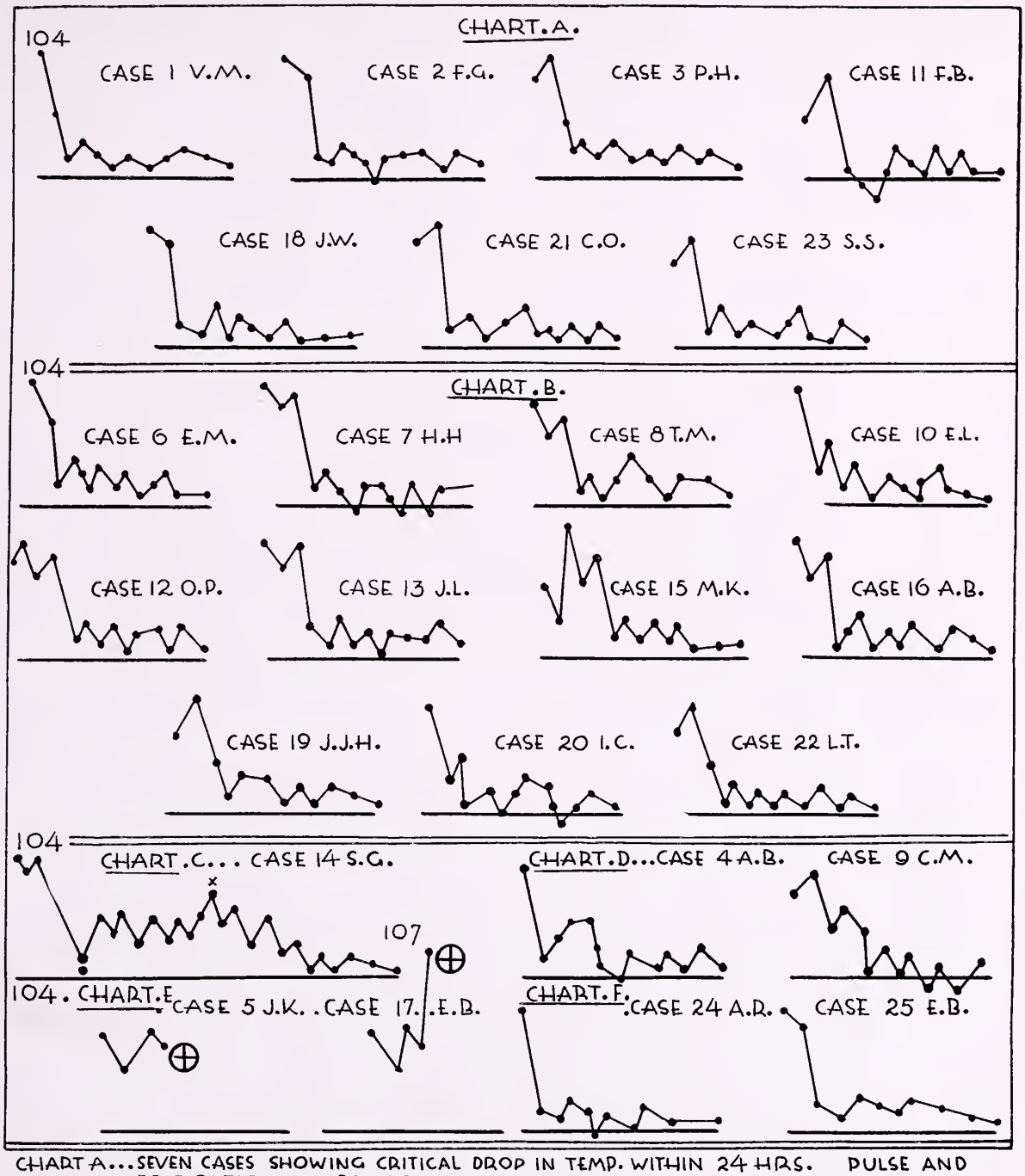


CHART A...SEVEN CASES SHOWING CRITICAL DROP IN TEMP. WITHIN 24 HRS. PULSE AND RESPIRATION IN PROPORTION. .

CHART B...ELEVEN CASES SHOWING CRITICAL DROP IN TEMP. WITHIN 48 HRS. CASE NO.12 TYPE 3 BLOOD CULTURE. . . .

CHART C...DRUG DISCONTINUED IN 24 HRS. SUBSEQUENT TEMP. RISE. READMINISTERED (x) AND PATIENT SHOWED SATISFACTORY RESPONSE. .

CHART D...CASE NO.4. TYPE 1 BL. CULT. . CASE NO.9 TYPE 3 BL.CULT. . INITIAL RESPONSE TEMP. NORMAL IN 72 HRS. . . . .

CHART E...CASE NO.5. TYPE 2 BL.CULT. . DURATION 7 DAYS. . DIED WITHIN 24 HRS. CASE NO.17. DURATION UNKNOWN. . TYPE 18 BL.CULT. . LEUCOPENIA ON ADMISSION. . DIED WITHIN 48 HRS. .

CHART F...TWO INFANTS SHOWING EXCELLENT RESPONSE TO SULFAPYRIDINE WITHIN 24 HRS

ably to irregular absorption and excretion and to irregular formation of the conjugated form (acetylation). Spectroscopic examinations for methemoglobinemia or sulphemoglobinemia were not carried out.

The response to treatment was satisfactory in all but two of our cases, which have been discussed in detail, both showing a positive blood culture and having had unusually long delay before treatment was begun. In our series, those patients who had a bacteremia, while showing a good initial response to therapy, did not reach and maintain a normal temperature in less than 48 to 72 hours. Incidentally there were four cases of type III pneumonia, two with bacteremia, all of which recovered.

It is interesting to note that there appeared to be no relationship between blood level concentration and response to therapy. We are unable to say what the optimum blood level concentration should be but apparently our average of 4-5 mgms. of free sulfapyridine per 100 c.c. appears to be satisfactory.

We have observed that in those cases in which the sulfapyridine has been discontinued too early, there has been a subsequent rise in temperature, which has required a longer period of time to return to normal. It appears therefore that the drug should be continued for at least 48 hours after the return to normal temperature.

As our experience with the use of sulfapyridine, preceded, followed or used in conjunction with type specific serum, has been limited to only a few cases, we are unable to say whether there is any advantage in the use of serum in conjunction with sulfapyridine although, inasmuch as the action of sulfapyridine appears to be bacteriostatic, it seems reasonable to believe that those cases that do not show a satisfactory antibody response with sulfapyridine alone might be aided by the additional use of serum.

Although our cases showed relatively few toxic manifestations referable to the medication, nevertheless we feel that this drug, while having a decided beneficial effect in the treatment of pneumonia, should not be given indiscriminately or without regard to the possible toxic manifestations. From our observations it appears that the nausea and vomiting is probably due to gastric irritation, although some observers feel that it is of central origin. We have certainly had less difficulty in this respect when the medication was suspended in milk.

Because of the variability of the blood concentrations and the possibilities of getting too little with impaired therapeutic effect or too much with possible toxic manifestation we feel that blood determinations should be made in all cases.

Although an alternate simultaneous control series was not made, it is interesting to note our mortality statistics for pneumonia at this hospital for the past five years, which showed a mortality rate ranging from 25% to 37%, the average being 31%. This is also true of any consecutive series of 25 cases treated at this hospital or any series of cases treated from January to April, covering the same seasonal period as our series. We have personally observed most of the cases during the past five years, and feel that they did not present any sicker group than those treated this year. Certainly our results with sulfapyridine are extremely encouraging.

Conclusion

Sulfapyridine is an effective therapeutic drug in the treatment of pneumococcus pneumonia, causing a decrease in the mortality and morbidity of this disease and shortening the convalescent period. It appears to be a relatively safe therapeutic agent, but should be used with caution with regard to its toxic possibilities.

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CHARLES H. HOLT, M.D.

President of the Rhode Island Medical Society — 1939-1940

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THE CONSULTATION

It is a fact that the majority of patients receive more than adequate care by their respective physicians or surgeons and that the courses of their illnesses run uneventfully to a satisfactory recovery. It is also a fact that some cases are irregular in their respective courses so that they are either puzzling as to the diagnosis or fail to respond to the therapy afforded them. It is to these irregular types of cases that the consultation is of value.

Webster defines the consultation as a deliberation between two or more physicians concerning the diagnosis of the disease of the patient and the proper method of treatment. The consultation yields many advantages to all concerned—especially to that most important individual—the patient.

It is to the patient's advantage that the possibility of error in diagnosis and treatment is diminished by at least fifty per cent by this procedure. It is a source of satisfaction to the patient in that it removes any doubt from his mind as to the diagnosis and the advisability of treatment. And it is to the patient's advantage to have the opinion of one who has probably seen many similar cases and their outcome.

It is to the family doctor's advantage to have the possibility of error in diagnosis and treatment lessened to a great degree and to have a brother M.D. share the responsibility of the diagnosis and the course of treatment. The family doctor's knowledge as to cases of the type concerned is increased. The consultation is also of benefit to the family doctor in that it greatly increases his patient's confidence and esteem.

The consultation is of advantage to the consultant in that it contributes to his knowledge in his particular field of medicine. It gives him a share in the responsibility for the diagnosis and treatment of the patient. It adds to his prestige and professional standing in his particular branch of medical field.

ANNUAL MEETING

The Committee of Arrangements for the Annual Meeting of the Rhode Island Medical Society deserve the congratulations and thanks of the members. Time was when these meetings were not as good as they should be. This year both clinics and papers were given on timely and important subjects, the presentations were very good and in many instances of unusual excellence and altogether the meeting was thoroughly worth while.

There are two interesting points that deserve some thought. The attendance, except for the evening meetings, was not as good as the quality of the program would lead one to expect. We believe that there should be more advance publicity in local medical associations, in the Rhode Island Medical Journal and through the mail, and that before the meeting a program as detailed as possible should be mailed to each member. Such publicity would undoubtedly increase the attendance.

Another factor in the situation is the failure of many physicians to join the Rhode Island Medical Society. The total membership is 492, just over 50% of the physicians of the State. The time has come to make all members of the District Associations automatically members of the State Society. These men should realize that the State Society, which upholds the cause of medicine at the State House and at Washington, needs their support. The scientific and social activities of the Society give them full value for their dues.

RHODE ISLAND MEDICAL SOCIETY

Minutes of the One Hundred and Twenty-eighth Annual Sessions

Meeting of the Council

The annual meeting of the Council of the Rhode Island Medical Society was held at the Medical Library, Thursday, May 18, 1939. The meeting was called to order by the President, Dr. Edward S. Brackett, at 4:30 P. M. Present were Drs. Brackett, Hammond, DeWolf, Wheaton, George S. Mathews, Partridge, Donley, J. P. Jones, Holt, Fulton, Wing, Hussey, Mowry and Miller. In the absence of the Secretary, who was representing the Society at the St. Louis convention of the American Medical Association, Dr. Miller was appointed Secretary pro tem.

The Secretary read the records of the Council meeting of January 19, which were approved and placed on file. The report of the Treasurer was read by Dr. Jesse E. Mowry. It was received and placed on file. On motion of Dr. Mowry, seconded by Dr. Partridge, Drs. Frank S. Hale and J. P. Lobe were reinstated as fellows of the Society. The resignation of Dr. James P. Londergan was accepted. On his request, Dr. A. Sammartino was suspended temporarily from fellowship in the Society. It was voted that Drs. M. Messerlian and C. S. Ducet be reinstated to fellowship on payment of dues.

Responding to the request of the Council, Dr. Harry C. Messinger, Chairman of the Committee on Publication, reported on the condition of the *Rhode Island Medical Journal* and recommended that an appropriation of $486.00 be made for its support. Dr. Partridge moved that the Society support the Journal. The question was discussed by Drs. Hammond, Mowry, Brackett, Donley, Miller and Messinger. On motion of Dr. DeWolf, duly seconded, it was voted to appropriate $243.00 for support of the *Journal*.

The meeting was adjourned at 5:35 P. M.

Respectfully submitted,

ALBERT H. MILLER, M.D.,
Secretary pro tem.

Meeting of the House of Delegates

The annual meeting of the House of Delegates of the Rhode Island Medical Society was held at the Medical Library, Thursday, May 18, 1939. The meeting was called to order by the President, Dr. Edward S. Brackett, at 5:40 P. M. In the absence of the Secretary, Dr. Miller was appointed Secretary pro tem.

The report of the Nominating Committee was read by Dr. Hammond. As there were no counter nominations, on motion of Dr. Mowry, by unanimous consent, the Secretary cast one ballot for the candidates recommended by the Nominating Committee. They were declared elected as the officers for the ensuing year.

The Secretary then read the minutes of the meeting of the Council of even date. Dr. Mowry read the report of the Treasurer. Dr. Miller read the report of the Secretary. The report of the Committee on Arrangements was read by Dr. Dimmitt. The report of the Committee on Legislation was presented by Dr. Harris. The Secretary read the report of the Library Committee. The report of the Committee on Publication was read by Dr. Messinger. Dr. Eddy presented the report of the Committee on Education. Dr. Woodmansie presented the report of the Committee on Necrology. The Secretary read the reports of the Committees on Publicity and on Annual Commercial Exhibits. He next read the reports of the Committees on Annual Clinics and on Cancer. Dr. Wing presented the report of the Committee on Hospitalization Insurance. Each of these reports was accepted and placed on file.

On motion of Dr. Burgess, seconded by Dr. Hammond, Dr. Brackett was elected a member of the Executive Board of the Hospital Service Corporation of Rhode Island, for a term of three years.

Dr. Hussey then read the report of the Committee on State Policies of Public Health. Dr. Hammond presented the report of the Committee on Social Security. Dr. Walsh presented the report of the Committee on Maternal Mortality. The report of the Committee on Child Health was read by Dr. Utter. Each of these reports was received and placed on file.

Under the head of new business, the matter of W.P.A. workmen being referred to government hospitals for treatment was referred to the Committee on Social Security.

The meeting was adjourned at 6:50 P. M.

Respectfully submitted,

ALBERT H. MILLER, M.D.
Secretary pro tem.

Annual Report of the Treasurer

J. W. C. Ely Fund

January 1, 1938		January 1, 1939	
37 shares Rhode Island Public Service Co.	$1,071.67	37 shares Rhode Island Public Service Co.	$1,071.67
Interest	74.00	11⅕ new shares Common Stock, Mechanics Nat. Bank	280.00
11⅕ new shares Common Stock, Mechanics Nat. Bank	280.00	Paid Rhode Island Medical Society for Journals	74.00
Interest in default			
	$1,425.67		$1,425.67

Endowment Fund

January 1, 1938		January 1, 1939	
16 shares National Bank of Commerce & Trust Co.	$1,200.00	16 shares National Bank of Commerce & Trust Co.	$1,200.00
Interest	48.00	74 shares Providence Gas Co.	906.50
74 shares Providence Gas Co.	906.50	Peoples Savings Bank	3,419.96
Interest	44.40		
Peoples Savings Bank	3,245.92		
Bank interest	81.64		
	$5,526.46		$5,526.46

E. M. Harris Fund

January 1, 1938		January 1, 1939	
2,000 A-NY & B-NY Realizing Corp. Debentures 5½%	$2,000.00	2,000 A-NY & B-NY Realizing Corp. Debentures	$2,000.00
4 shares stock A-NY & B-NY Realizing Corp. No interest in 1938		4 shares stock A-NY & B-NY Realizing Corp.	
2,000 General Public Utilities Co. 6½%	1,980.00	2,000 General Public Utilities	1,980.00
Interest	156.00	26 shares Nicholson File Co.	1,040.00
26 shares Nicholson File Co.	1,040.00	Paid Rhode Island Medical Society for Repairs on Building	210.60
Interest	54.60		
	$5,230.60		$5,230.60

Frank L. Day Fund

January 1, 1938		January 1, 1939	
3,000 Canadian National Railway Co. 4%	$2,979.75	3,000 Canadian National Railway Co.	$2,979.75
Interest	135.00	Paid for Medical Books	73.05
Industrial Trust Company	448.48	Industrial Trust Company	510.43
	$3,563.23		$3,563.23

Herbert Terry Fund

January 1, 1938		January 1, 1939	
96 shares Providence Gas Co.	$1,152.00	96 shares Providence Gas Co.	$1,152.00
Interest	57.60	Paid Rhode Island Medical Society for Journals	57.60
	$1,209.60		$1,209.60

James R. Morgan Fund

January 1, 1938		January 1, 1939	
43 shares Providence Gas Co.	$ 526.75	43 shares Providence Gas Co.	$ 526.75
Interest	25.80	Paid Rhode Island Medical Society for Expenses	25.80
	$ 552.55		$ 552.55

James H. Davenport Fund

January 1, 1938		January 1, 1939	
89 shares Providence Gas Co.	$1,068.00	89 shares Providence Gas Co.	$1,068.00
Interest	53.40	Balance on hand	505.33
Balance on hand	451.93		
	$1,573.33		$1,573.33

Cataloguing Fund

January 1, 1938		January 1, 1939	
Peoples Savings Bank	$ 139.32	Peoples Savings Bank	$ 142.82
Interest	3.50	Providence National Bank, Checking Account	195.57
Providence National Bank	208.07	Paid out during 1938	12.50
	$ 350.89		$ 350.89

Participation Account

January 1, 1938		January 1, 1939	
Providence Institution for Savings	$ 567.38	Providence Institution for Savings	$ 580.93
Interest	13.55		
	$ 580.93		$ 580.93

RECEIPTS

Cash on Hand January 1, 1938	$1,734.48
Annual Dues	4,162.50
Donations	690.10
Harris Fund	210.60
Terry Fund	57.60
Davenport Fund	53.40
Ely Fund	74.00
Morgan Fund	25.80
Endowment Fund interest transferred to Peoples Savings Bank	92.40
Exhibits, Annual Meeting, Donations	365.00
	$7,465.88

EXPENDITURES

Collation and Annual Dinner Expenses	$ 681.00
Expenses of Secretary, Secretary Service, etc.	90.00
Printing and Postage	137.43
Gas	42.15
Electricity	73.38
Fuel	523.00
Telephone	113.35
City Water	18.36
House Supplies and Expenses	264.45
House Repairs	198.71
Librarian	1,660.00
Janitor	780.00
Journals, Ely and Terry Funds	73.50
Safe Deposit	6.60
Treasurer's Bond	25.00
Dues, Medical Library Association	10.00
Delegate, American Medical Association	100.00
Sunday Lectures	132.32
Endowment Fund interest transferred to Peoples Savings Bank	92.40
Expenses, Publicity Committee	28.20
	$5,049.85
Cash on Hand to Balance	2,416.03
	$7,465.88

Respectfully submitted,

JESSE E. MOWRY, M.D.,

Treasurer.

Examined and found correct, May 17, 1939.

HAROLD L. COLLOM, M.D.
J. MURRAY BEARDSLEY, M.D.

Report of the Nominating Committee

The Nominating Committee appointed by the President to submit to the House of Delegates, a list of Officers and Standing Committees for the ensuing year, begs leave to report as follows:

President:
Charles H. Holt, Pawtucket

First Vice President:
Lucius C. Kingman, Providence

Second Vice President:
Frederic V. Hussey, Providence

Secretary:
Guy W. Wells, Providence

Treasurer:
Jesse E. Mowry, Providence

Legislative, State and National
Herbert E. Harris, Providence
Charles F. Gormly, Providence
Earl F. Kelly, Pawtucket
The President and Secretary, ex-officio

Publication
Charles S. Christie, West Warwick
John E. Donley, Providence
Charles J. Ashworth, Providence
The President and Secretary, ex-officio

Education, State and National
Jesse P. Eddy, 3rd, Providence
Thad A. Krolicki, Pawtucket
Frank B. Cutts, Providence
The President and Secretary, ex-officio

Library
Herbert G. Partridge, Providence
Andrew W. Mahoney, Providence
Samuel Adelson, Newport

Necrology
Harry F. Crandall, Westerly
Guyon G. Dupre, Woonsocket
Edward T. Streker, Providence

Arrangements
Nathan A. Bolotow, Providence
Walter S. Jones, Providence
Ralph DiLeone, Providence
The Treasurer, ex-officio

Delegate
Guy W. Wells, Providence

Alternate
Alex M. Burgess, Providence

Curator
Carl D. Sawyer, Providence

Auditors for 2 years
J. Murray Beardsley, Providence
Robert T. Henry, Pawtucket

Respectfully submitted,
LINWOOD H. JOHNSON
HENRI E. GAUTHIER
JOHN F. KENNEY
WILLIAM S. STREKER
ROLAND HAMMOND, *Chairman.*

CHARLES V. CHAPIN HOSPITAL

Dr. Robert W. Drew left June 30 to return to the Rhode Island Hospital as assistant superintendent. Dr. Genarino R. Zinno, who finished a six-month internship at the Chapin Hospital on June 30 will fill the vacancy.

Drs. Martin Glynn, Irving Blazar, Edgar S. Highberger, and Raymond E. Moore also completed internships. Dr. Moore is leaving to open an office somewhere in Massachusetts.

The new interns who commenced service on July 1 were Drs. Harry R. Kellett, E. Mansfield Gunn, Isadore Gershman, Michael DiMaio, and Walter E. Batchelder. Dr. James P. McCaffrey, a graduate of Harvard College and Tufts Medical School, 1937, will commence an internship later in the month upon arrival from a trip abroad. He has finished an internship at the Rhode Island Hospital.

Dr. Kellett, of Lawrence, Massachusetts, a graduate of Bowdoin College and Tufts College Medical School, 1938, has had a one-year internship at the Newton Hospital.

Dr. Gunn comes from Westerly, attended Rhode Island State College, and finished his studies at the Syracuse University College of Medicine this year.

The other three men are from Providence. Dr. DiMaio attended Rhode Island State College and received his degree this year from the Johns Hopkins University School of Medicine. He spent three months at the Chapin Hospital during the summer of 1938. Dr. Batchelder is a 1939 graduate of Boston University Medical School and had three months at the Rhode Island Hospital last summer. He is the brother of Dr. Phillip Batchelder who is assistant director of the X-ray Department of the Rhode Island Hospital. Dr. Gershman is a graduate of Brown University and after graduating from Jefferson Medical Collge in 1938, he accepted a one-year appointment at the Wilmington General Hospital in Delaware which ended June 30.



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3. **Q.** What is the total formula for twenty-four hours for weaning?

   A. *Milk, whole, 24 ozs. Boiled water, 8 ozs. Karo Syrup, 3 tablespoons. Four feedings, eight ozs. every four hours.*



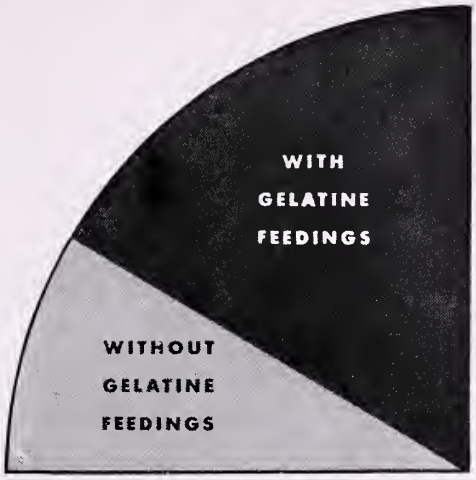
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"Proceedings of the Society for Experimental Biology and Medicine", 40:157, 1939.

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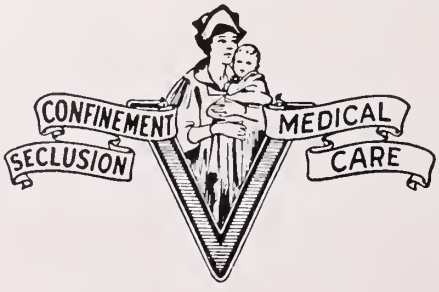
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☐ N. Y. State Jour. Med. 1935, 35-No. 11,590—"Irritating Properties of Cigarette Smoke as Influenced by Hygroscopic Agents."

☐ Laryngoscope, 1935, XLV, No. 2, 149-154—"Some Clinical Observations on the Influence of Certain Hygroscopic Agents in Cigarettes."

☐ Laryngoscope, 1937, XLVII, 58-60—"Further Clinical Observations on the Influence of Hygroscopic Agents in Cigarettes."

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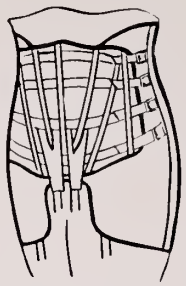
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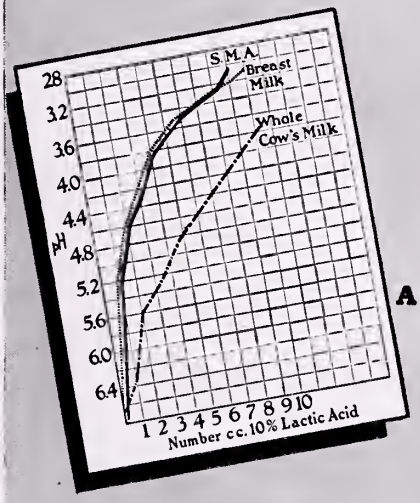
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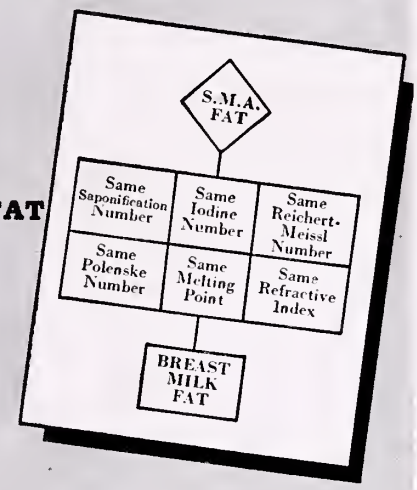
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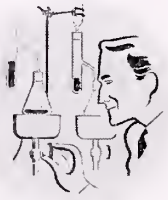
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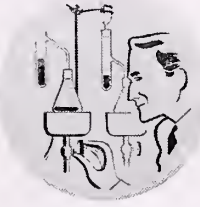
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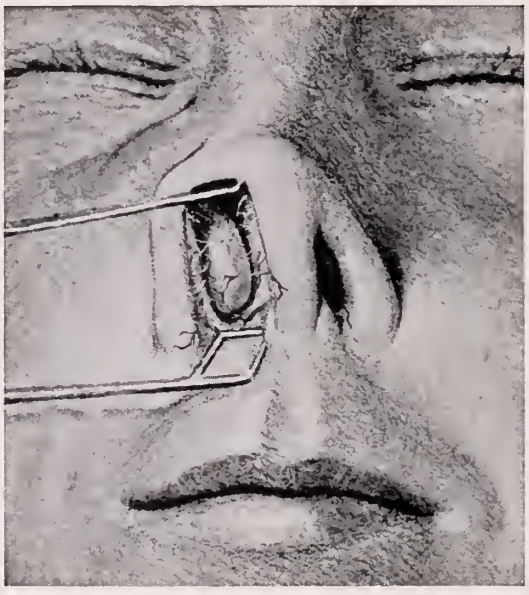


Fig. 1 — 1:45 P. M. Before treatment. Note extreme venous stasis and edema.

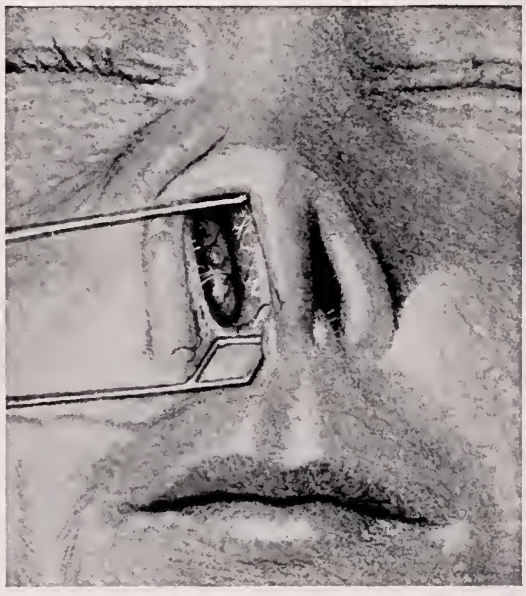


Fig. 2—2:07 P.M. After treatment with 'Benzedrine Inhaler'. Complete shrinkage and blanching.

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PRESENT VITAMIN STANDARDS AND UNITS

● Early in this decade the first International Standards of Reference and Units for vitamins defined in terms of definite quantities of the standard materials were tentatively adopted by the Permanent Commission on Biological Standardization of the League of Nations. At subsequent meetings this Commission has replaced certain of the original standard materials by the pure vitamins or preparations considered to be better adapted as standards of reference. However, the new units defined in terms of the new standards represent approximately the same biological activities as the original International Units.

Believing that the present units and the standards of reference upon which they are based will be of interest, they have been tabulated and defined:

Vitamin A

The standard of reference (1) is a solution of purified beta-carotene in an inert oil, of such concentration that one gram of solution contains 300 micrograms (0.300 mg.) of beta-carotene. The International Unit of vitamin A is the vitamin A activity of 2 mg. of the standard solution, or 0.6 micrograms of beta-carotene.

Vitamin B_1

The reference standard (2) is the International Standard preparation of thiamin chloride. The International Unit for vitamin B_1 is the antineuritic activity of three micrograms (3γ) of the International Standard.

Vitamin C

The reference standard (1) for vitamin C is a specified sample of crystalline levo-ascorbic acid. The International Unit for vitamin C is the vitamin C activity of 0.05 mg. of this standard.

Vitamin D

The reference standard (1) for vitamin D is a solution of irradiated ergosterol, prepared under specified conditions at the National Institute for Medical Research (London). The International Unit for vitamin D is the vitamin D activity of 1.0 mg. of this standard solution.

The International System of expressing vitamin values will undoubtedly soon become official for all authoritative agencies which concern themselves with the establishment of vitamin standards and units. Reference standards for riboflavin and nicotinic acid—both of which are of significance in human nutrition—have not been defined. However, the use of units such as micrograms or milligrams of the crystalline compounds to express riboflavin and nicotinic acid values is becoming increasingly prevalent.

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(1) 1935. Nutrition Abstracts and Reviews, 4, 705.
(2) 1938. League of Nations Bulletin of the Health Organization, 7, 882.
(3) 1938. J. Am. Diet. Assn., 14, 1.
1938. J. Am. Diet. Assn., 14, 8.
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1938. J. Am. Med. Assn., 110, 650.
1938. Nutrition Abstracts and Reviews, 8, 281.

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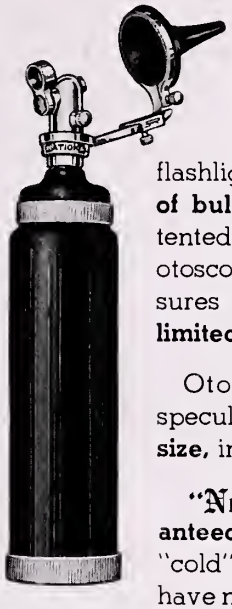
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VOLUME XXII AUGUST, 1939 NUMBER 8

BLOOD CHEMICAL CHANGES IN NEPHRITIS

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Chemical changes in the body in nephritis are numerous because this disease affects one of the most important organs of excretion for the body's waste products. Total metabolism is little affected by kidney disease and tissue changes are unimportant compared to changes in the blood.

We think of the kidney as a physiological unit composed of two functional parts, the glomerulus and the tubule. The former acts as a filter to separate from the blood all of its diffusible constituents of small molecular size. The latter acts on this glomerular filtrate to reabsorb the diffusible constituents that the body needs (e.g. water, sugar, base and chloride). The tubule has some proven excretory power as well. With glomerular disease less filtrate may be formed, or larger particles may get through (plasma proteins, formed elements). With tubular disease reabsorption is abnormal and concentrating ability may be poor, adequate changes are not made in the filtrate so that base is lost.

Nitrogen of the blood is divided between *protein nitrogen* and *non-protein nitrogen* in the ratio of 300 parts protein nitrogen to 1 of non-protein nitrogen normally. In the latter are most of the waste products of protein metabolism. Their level in the blood will depend on hydration of the blood, rate of protein catabolism and renal blood flow, in addition to the excretory ability of the kidney.

Non-protein nitrogen contains the following constituents listed in order of the amounts present:

1. Urea N
2. Amino Acid N
3. Uric Acid N
4. Creatine N
5. Creatinine N
6. Rest N

Urea N levels in the blood are not increased in true nephrosis but do increase in kidney disease that prevents glomerular filtration of this waste product. In terminal nephritis the B.U.N. may reach 400 mg.% or nearly thirty times the normal level.

Creatinine is retained under the same conditions as B.U.N. and may reach 40 mg.% in the blood in terminal nephritis. Because creatinine has mainly an endogenous source its retention has more prognostic value than the B.U.N. In general a creatinine value of more than 5 mg.% gives a bad prognosis, especially in a chronic nephritis.

Uric acid, the waste product of nucleoprotein metabolism, is retained in kidney insufficiency. In terminal nephritis values may reach 40 mg.% It is interesting that values in gout, without renal involvement, are only one quarter of this figure, or less.

Amino acids and creatine, because they are not waste products are not retained in kidney disease. Other organs can remove excesses that might result from decreased excretion.

The *Rest-nitrogen* fraction increases slightly in kidney disease. Its composition is not completely known.

N.P.N. determination is used in many hospital laboratories in place of B.U.N. determination. Since it includes all of the above fractions and contains from 50% B.U.N. at normal levels to 90% in uremia, it changes as B.U.N. does, though less markedly.

We should mention at this stage that while increases in blood non-protein nitrogen constituents are used as a measure of increasing kidney disease they are not the cause of the uremic syndrome. The real cause is not known, but increases in blood *phenolic and guanidine-like substances* seem to have more causal relationship to the development of uremia.

Three main proteins are present in blood plasma, *albumin, globulin and fibrinogen.* Albumin has a smaller molecule than the others, so when the glomerular membrane is diseased so that it is permeable to large molecules, albumin is lost first. In kidney disease with proteinuria the plasma proteins fall mainly due to a loss of albumin and with essentially normal levels of globulin and fibrinogen. Albumin also exerts more osmotic pressure per gram than the other two and with the lowered

Read before the Providence Medical Association, May 1, 1939.

plasma protein there is a decreased osmotic pressure of the blood which leads to edema formation in the tissues. In the early stages of acute nephritis there is edema formation that occurs without change in plasma protein due presumably to changes in capillary permeability, but persistent edema in nephritis is due to lowered plasma protein. This change is most marked in nephrosis, but occurs in the other nephritides also. To combat it one should feed adequate protein in the diet and restrict sodium chloride which aids edema formation.

Blood sugar is not changed in nephrosis or the early stages of glomerular nephritis, but in the advanced stages of the latter, fasting blood sugars are above normal in the majority of cases. Carbohydrate oxidation is normal and this change is due to a lag in the storage process.

Next to diabetes, *lipemia* is found most often in nephritis. *Cholesterol* is very high in the nephrotic syndrome (up to ten times the normal), is occasionally high in glomerular nephritis, and is usually low in terminal nephritis. A falling value in the glomerular type gives a poor prognosis. Values for *neutral fat, fatty acids* and *lecithin* usually vary in the same direction as cholesterol. Oxidation of fat is normal and the increased blood values are explained as increased mobilization of fat. One explanation of the fatty changes in the tubules in nephrosis is a high excretion of cholesterol which is absorbed from the glomerular filtrate by the tubules, where it is accumulated.

Ammonia is present only in traces in normal bloods, yet the kidney has the ability to form NH^+_4 from urea to conserve the body base. In nephritis blood levels are unchanged but the cells of the tubules by losing their ability to form NH^+_4 in disease, allow wastage of body base.

Total base of the blood consists mainly of sodium, potassium, calcium and magnesium. *Sodium* is present in much larger amounts than the others, and it seems to control the water exchange between tissues and blood. As proven by sodium-deprivation experiments in man and animals a certain concentration of sodium is necessary for adequate hydration of the tissues, and also for proper excretory function of the normal kidney. When the ammonia-forming mechanism of the kidney fails in disease there is a greater loss of sodium, which leads to lowered values in nephritis with uremia, and may further aggravate the decreased efficiency of the kidney to excrete waste products. As sodium falls, *potassium* tends to increase slightly. Nausea and vomiting will also lead to decreased total base.

With inability to excrete nitrogenous waste products there is also a decrease in excretion of *inorganic phosphate*. In marked nitrogen retention blood inorganic phosphate levels may rise to 30 mg.%, about eight times the normal. This utilizes part of the sodium that should be used to carry carbon dioxide as bicarbonate and lowers alkali reserve, as we shall see later. Because of the solubility product of calcium and phosphate ions, it also decreases blood *calcium*. Serum calcium may fall as low as 5 mg.% in uremia with hyperphosphatemia, but we do not see tetany because the acid condition of the blood keeps almost all of the calcium ionized. If sodium bicarbonate is given indiscriminately tetany may result. Another reason for decreased serum calcium levels is the decrease often found in plasma protein. Calcium exists in the blood mainly as an ionized calcium proteinate so its amount will vary with the protein level.

Magnesium shows no characteristic change in the blood in nephritis. It should be mentioned however, that the use of magnesium sulfate in kidney insufficiency may result in coma due to high blood magnesium because its excretion by way of the kidney is inadequate. Sodium sulfate is a safer saline cathartic, and hypertonic sugar solutions are safer for relief of cerebral edema.

Blood *inorganic sulfates* are increased where there is nitrogen retention. They contribute to the acidosis.

Hemoglobin is seldom changed in nephrosis or early acute nephritis, but an anemia is usually present in chronic nephritis. This anemia cannot be explained on the basis of blood loss through the kidney. Feeding iron does help to improve the hemoglobin level.

Carbon dioxide is carried in the blood as *sodium bicarbonate*. Total base is divided mainly between chloride and bicarbonate with small amounts for phosphate, sulfate, organic acids, hemoglobin and proteins. In uremic nephritis more base is required for the phosphates and sulfates which are not excreted, leaving less for bicarbonate and chloride. With vomiting some base is lost, and we have mentioned that the kidney mechanism of conserving base, by forming ammonia to excrete acid products, is a failure, so that low levels of sodium bicarbonate

SUBSTANCES		NORMAL	NEPHROSIS	NEPHRITIS	
				EARLY	TERMINAL
N. P. N.	Urea N	6- 15 mg%	Normal	Normal to high	Very high
	Amino Acids	4- 8 mg%	Normal	Normal	Normal
	Uric Acid	3- 4 mg%	Normal	Normal to high	Very high
	Creatine	3- 7 mg%	Normal	Normal	Normal
	Creatinine	1- 2 mg%	Normal	Normal to high	Very high
	Rest N	10- 19 mg%	Normal	Normal	Increased
Plasma Proteins	Albumin	4- 6 gm%	Very low	Normal to low	Low
	Globulin	2- 3 gm%	Normal	Normal to high	Normal
	Fibrinogen	0.1- 0.3 gm%	Normal	Normal	Normal
Glucose		60- 95 mg%	Normal	Normal	Increased
Cholesterol		150-220 mg%	Very high	Increased	Decreased
Serum Sodium		330-340 mg%	Normal	Normal	Low
Serum Potassium		16- 20 mg%	Normal	Normal	Increased
Serum Calcium		9- 11 mg%	Decreased	Normal	Low
Serum Magnesium		2- 4 mg%	Normal	Normal	Normal
Inorganic phosphate		2.5- 4 mg%	Normal	Normal to high	Very high
Inorganic sulfate		1- 2 mg%	Normal	Normal	Increased
Hemoglobin		15- 17 gm%	Normal	Low	Low
CO_2 comb. power		45- 60 vol%	Normal	Normal	Low
Chlorides as NaCl (whole blood)		450-500 mg%	Normal	Normal	Normal high or low

are almost always found in uremia. Carbon dioxide combining power, or *alkali reserve,* may fall to as low as 5 volumes per cent. Intravenous sodium chloride will not improve the alkali reserve because the kidney cannot excrete the acid radical selectively. When dyspnea is present it can be relieved by sodium bicarbonate or sodium lactate, but we must remember that improvement of the acidosis by too much may lead to tetany.

The *chlorides* of the blood do not change consistently in nephritis. They are usually normal in nephrosis and in non-uremic nephritis. In uremia they may be normal, low or high. Low values are usually due to loss of chloride by vomiting. High values will leave less base for bicarbonate and increase acidosis. If low, sodium chloride should be given to offset the specific effect on the kidney function.

The following suggestions for treatment are based on the changes outlined above:

1. Fluids should be forced. If edema is present sodium salts should be avoided. Sodium and chloride should be given only to replace deficiencies due to vomiting and diarrhea. Isotonic dextrose will supply fluid for excretion.
2. Transfusions or intravenous acacia solution will decrease edema and withdraw fluid from the tissues.
3. Where dyspnea results from the acidosis sodium bicarbonate or lactate will help relieve it.
4. Feeding iron improves the anemia.
5. Adequate protein should be fed to prevent further destruction of serum proteins, and to prevent acid production by burning of body protein. The increased urea formation is not a contraindication.
6. Carbohydrate intake should be sufficiently high to prevent catabolism of body tissue with associated acid production.
7. An alkaline ash diet helps combat the acidosis.

REFERENCE:

Peters and Van Slyke—Quantitative Clinical Chemistry. Vol. 1, Interpretations. Williams and Wilkins, Baltimore, 1931.

SPIROCHETOSIS ICTEROHEMORRHAGIA

HOWARD G. LASKEY, M.D.
CAROLINA, RHODE ISLAND

During June 1939 four cases of Weil's Disease were encountered. All of the patients were females. Three occurred in one family but a fourth case had no contact with the others at any time. Three cases were from Shannock, one from Carolina. The symptoms in three cases indicate that there are mild and distinctly atypical cases which may readily escape recognition. The family in which three of its members became ill showed that the disease invoked varying response in each individual from mild infection to severe prostration. In each case the organism was found in the urine by concentration methods.

There was one acutely ill patient in the group. On request, P. J. Pesare and Edgar Staff of the State Laboratories conducted a bacteriological investigation of this case independently of me. By Cerquirs method they were able to identify the organism from the urine on two alternate days from four collected specimens. It was possible to identify the organism in the urine of all four cases

by Giemsa's method in about one of every four specimens.

Although the literature states that generally the organism does not appear in the urine until the end of the fifteenth day of illness, we were able to find the organism earlier, i.e., in one case on the eighth day.

I was unsuccessful in attempting to transmit the disease to guinea-pigs. Intraperitoneal injections of blood and urine from the severe case to guinea-pigs were given. Failure may be attributed to many reasons; this was done on the eighth day at a time when the organism are not generally found in the peripheral blood and theoretically before they may be found in the urine. Absence of a proper reservoir, or the presence of immune globulins may have been responsible. It was readily noted that the *Spirocheta icterohemorrhagia* was by no means readily present in the urine at all times. Careful methods were required. The organism appeared in showers from the kidneys at different periods of time. Three of the four cases were relatively mild in character except for concomitant nausea which was persistent for three or four days.

These cases appeared coincidentally with an increase in the rat and mouse population hereabouts. It is interesting to note that these rodents have abandoned the hurricane area at the beaches to migrate inland. The inadequate and primitive methods for garbage and sewage disposal hereabouts provides them with food. The rat cannot be proven to be the reservoir here without further study.

Case 1 . . . a nine-year-old girl had nausea and anorexia for four days when first observed. Careful physical examination revealed nothing. It was difficult not to regard this case as a behaviour problem due to some eccentricity of the libido. Likewise it was difficult to refrain from trying such a sacroscant therapeutic procedure as Vitamine B. Three days later a very well-marked jaundice appeared and one was able to palpate an enlarged liver. The urine was positive for the organism on the eighth day.

Case 2 . . . Her sister, aged eighteen years, developed the symptomatology of Weil's Disease with such precision and to such a degree in all the minutiae that the most academically minded could not fail to be satisfied. This case was studied at the South County Hospital on my service. The patient was acutely ill for a week before developing *icterus*. At this time she had a temperature of 103 to 104 degrees and a pulse rate of 80 to 90, due perhaps to vagal influence. This vagotonia was not abolished by atropine. The Van den Bergh was biphasic, the nonprotein nitrogen of the blood was slightly elevated, icterus index 12.8. The red cell count at the end of a week was 4,800,000. The leukocyte count, 5,500 of which 31% were toxic polymorphonuclears. Fragility tests were done to rule out Familial Hemolytic Jaundice. Staff and Pesare were able to find the organism in this patient's urine on two alternate days. They are at present engaged in some further work with material from this case, which they will report later.

Case 3 . . . another sibling, a girl, aged 16 years, developed anorexia, vomiting, headache and chilly sensations. This subsided in four days to be followed by an icterus which was accompanied by anorexia and slight transient nausea.

Case 4 . . . a girl, aged 12, resident in another town and not associated with the others, developed a mild train of symptoms of nausea and anorexia. This culminated in jaundice which lasted five days.

These four cases showed the organism in the urine at various times.*

The mother and three-year-old sister of the three girls who were ill, developed nausea and anorexia but no clinical evidence of icterus. The child's anorexia and nausea lasted about a week; the mother's symptoms lasted two days. Unfortunately a press of work precluded the necessary leisure to adequately study these two cases.

With regard to therapy there is little to add except from empiricism. The author would advocate liver extract which does no harm and may have some value as a little understood hematopoietic agent. Although the infecting organism is a spirochete it seemed dangerous to use antiluetic drugs with a temporarily imperfectly functioning liver. Intravenous Gentian Violet in .5% solution may be tried.

There is much more in these cases a critical observer might wish to see. This material is tendered with the hope that this disease may be watched for elsewhere, or considered, as a differential point, in the diagnosis of an obscure complaint of malaise and anorexia.

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* Three more cases have been seen and treated. They had no contact with the others, and were themselves, unrelated. One gave an history of having been bitten by a tick which had remained attached to the body for twenty-four hours before removal. This occurred five days before the onset of symptoms.



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PRIORITY

Without doubt, many others had crossed the Rubicon ahead of Julius Caesar, yet his name is linked in history with the crossing of the little stream, while the names of all those who may have passed before are missing; for Caesar publishd his accomplishment, while the others neglected this essential to renown.

During the past two years, convulsive treatment with Metrazol has been used in psychiatric disorders with sufficient success to warrant continuation of the practice. At Butler Hospital in Providence seventeen patients underwent this treatment between November 18, 1938, and February 6, 1939. Eight of these patients subsequently complained of pain in the back, and on roentgenological examination were found to have sustained compression fractures of the bodies of one or more of the dorsal vertebrae, usually in the upper five or lower three vertebrae. In the series of seventeen cases of metrazol convulsive treatment, 47% had suffered fractures of the vertebral bodies. It was required to immediately spread the news of a complication which well might contraindicate a method of treatment of distinct value in otherwise hopeless conditions.

The complication was first discovered at Butler Hospital on December 15, 1938. On February 6, 1939, the work was submitted for publication to The Journal of the American Medical Association by Drs. Basil T. Bennett, Jr. and Charles F. Fitzpatrick, of the Butler Hospital Staff, under the title "Fractures of the Spine Complicating Metrazol Therapy," a preliminary report directing "attention to a previously undescribed condition, compression fracture of the vertebrae resulting from metrazol therapy." On February 13 it was reported at a meeting of the Rhode Island Society for Neurology and Psychiatry. On February 16 it was again reported at a meeting of the Boston Society for Psychiatry and Neurology.

On April 29, 1939, an article entitled "Vertebral Fractures Produced by Metrazol-induced Convulsions," by Polatin, Friedman, Harris and Horwitz, from the New York State Psychiatric Institute and Hospital and Columbia University College of Physicians and Surgeons, was published in The Journal of the American Medical Association, without reference to the work at Butler Hospital. They had first noted the complication on January 18, 1939, and had then made roentgenological examinations of all available patients who had undergone metrazol treatment. In the series of fifty-eight cases, they found fractures of the thoracic vertebrae in twenty-two, 43.1% of the total number. The work at Butler Hospital was confirmed but not antedated.

It has often happened that discoveries have been made by independent observers, sometimes in far separate countries, so nearly synchronously that it has been impossible to decide who first made the discovery. But priority in making this valuable discovery should be retained by the staff of Butler Hospital. They made the first observation on December 15, 1938. They reported it before society meetings on February 13 and 16, 1939. Their paper was submitted for publication before any other

Polatin, Phillip, Friedman, Murray M.; Harris, Meyer M.; and Horwitz, William A.: Vertebral Fractures Produced by Metrazol-induced Convulsions. The Journal A. M. A., 112:17, 1584 (April 29), 1939.

Bennett, Basil T., Jr.; and Fitzpatrick, Charles F.: Fractures of the Spine Complicating Metrazol Therapy. The Journal A. M. A., 112:22, 2240 (June 3), 1939.

RHODE ISLAND MEDICAL SOCIETY

List of Fellows corrected to July 1, 1939

ABBATE, Rocco
ABBOTT, Harlan P.
ADAMS, Frank M.
ADELMAN, Maurice
ADELSON, Samuel
AGNELLI, Freeman B.
ALBERT, Simon
ALEXANDER, George H.
ALLIN, Francis E.
ANGELONI, Tito
APPLETON, Paul
ARCHAMBAULT, Joseph F.
ARMINGTON, Herbert H.
ASHTON, George W.
ASHWORTH, Charles J.
ASTLE, Christopher J.

BALDRIDGE, Robert R.
BARBER, Joseph D.
BARNES, Albert E.
BARNES, Alvah H.
BARR, Kathleen M.
BARROWS, Albert A.
BATCHELDER, Philip
BATES, Reuben C.
BEARDSLEY, J. Murray
BECKETT, Francis H.
BELANGER, Joseph F.
BELLIOTTI, Joseph L.
BENJAMIN, Emanuel W.
BERARD, Albert J.
BERNARDO, John R.
BERNSTEIN, Perry
BERRILLO, Anacleto
BERTINI, Armando A.
BEST, Oliver F.
BIRD, Clarence E.
BISHOP, E. Wade
BLACK, Edward J.
BLACK, Thomas F.
BLANCHARD, Howard E.
BLOUNT, Samuel G.
BLUMER, G. Alder
BOLOTOW, Nathan A.
BOLSTER, John A.
BOUCHER, Paul E.
BOURN, Lucy E.
BOWEN, Earl A.
BOYD, James F.
BRACKETT, Edward S.
BRADLEY, Charles
BRADSHAW, Arthur B.
BRAY, Russell S.
BROADMAN, Harry
BROTHERS, John H.
BROWN, Frederick N.
BUFFUM, William P.
BUGBEE, Raymond G.
BURGESS, Alexander M.
BURKE, Edward F.
BURKE, Francis E.
BURNS, Francis L.
BURNS, Louis E.
BURTON, Kenneth G.
BUTLER, Benjamin J.
BUXTON, Bertram H.

CALDER, Harold G.
CALISE, Domenico
CALLAHAN, James C.
CAMERON, Edward S.
CAMPBELL, Edward
CAPWELL, Remington P.
CASE, Jarvis D.
CASTALLO, Salvatore
CERRITO, Louis C.
CHAFEE, Francis H.
CHAPIAN, Mihran A.
CHAPIN, Charles V.
CHARON, Ernest A.
CHASE, Peter P.
CHESEBRO, Edmund D.
CHRISTIE, Charles S.
CICMA, H. G.
CLARK, Samuel D.
CLARKE, B. Earl
CLARKE, Elisha D.
CLARKE, Elliott M.
CLUNE, James P.
COHEN, William B.
COLLOM, Harold L.
CONLON, Leo V.
CONRAD, Egbert V.
CONSTANTINEAU, Aurelien
CONWAY, John J.
COOK, Irving S.
COOK, Paul C.
COOKE, Charles O.
COONEY, John P.
CORBETT, Francis A.
CORMIER, Evariste A.
CORRIGAN, Francis V.
CORVESE, Anthony
COUGHLIN, Frederic A.
COX, James H.
CRANDALL, Charles P.
CRANDALL, Harry F.
CRANK, Rawser P.
CUMMINGS, Frank A.
CUMMINGS, Wm. Walter
CURREN, Levi A.
CUTTS, Frank B.
CUTTS, Morgan
CUTTS, William B.

DANFORTH, Murray S.
DAVIES, Stanley D.
DAVIS, William P.
DEERY, James P.
DEVERE, Frederick H.
DE WOLF, Halsey
DI LEONE, Ralph L.
DIMMITT, Frank W.
DONLEY, John E.
DOTEN, Carl R.
DOTTERER, Charles S.
DOUCET, Charles S.
DOWLING, Joseph L.
DOWLING, Richard H.
DUCKWORTH, Milton
DUFFY, William F.
DUFRESNE, Walter J.
DUGAS, Leo
DUPRE, Guyon G.
DURKIN, Patrick A.
DUSTIN, Cecil C.
DWYER, George J.

ECKSTEIN, Adolph W.
EDDY, Augustine W.
EDDY, Jesse P.
EMIDY, Herman L.
EMIDY, Stephen E.
ERINAKES, Peter C. H.

FAGAN, James H.
FARRELL, Charles L.
FARRELL, John T.
FARRELL, Robert L.
FEINBERG, Banice
FERGUSON, John B.
FIDANZA, Antonio G.
FISHBEIN, Jay N.
FITZPATRICK, Charles P.
FLETCHER, William
FLYNN, Harry S.
FLYNN, Joseph C.
FLYNN, Thomas S.
FONTAINE, Auray
FORGET, Ulysse
FOX, A. Henry
FOX, George R.
FRANKLIN, Joseph
FREEDMAN, David
FULTON, Frank T.

GALLAGHER, Henry J.
GARRISON, Norman S.
GARSIDE, Francis V.
GAUDET, Albert J.
GAUTHIER, Henri E.
GAYLORD, William A.
GEIGER, Preston D.
GELLER, Philip S.
GERBER, Isaac
GIBSON, J. Merrill
GIFFORD, Nathaniel H.
GILBERT, James A.
GILBERT, John J.
GOLDBERGER, Milton
GOLDOWSKY, Seebert J.
GONGAWARE, Hartford P.
GORDON, G. Stanley
GORDON, John H.
GORDON, Walter C.
GORMLY, Charles F.
GRAHAM, William J.
GREENSTEIN, Jacob E.
GRENOLDS, Walter J.
GROSSMAN, Herman P.
GROVER, Morris L.
GRZEBIEN, Thomas W.

HACKING, Raymond F.
HAGAN, Eugene A.
HAGENOW, LeRoy K.
HALE, Frank S.
HALL, Hugh J.
HAM, John C.
HAMILTON, James
HAMMOND, Roland
HANLEY, Francis E.
HANLEY, Henry J.
HANSON, Frederick C.
HAPP, Linley C.
HARDMAN, Margaret S.
HARDY, Arthur E.
HARRIS, Herbert E.
HARVEY, Norman D.
HASCALL, Theodore C.
HATHAWAY, Clifford S.
HAWKES, Charles E.
HAWKINS, Joseph F.
HAYES, Albert E.
HAYES, Walter E.
HAYWARD, John A.
HELFRICH, John W.
HENRY, Robert T.
HILL, Prescott T.
HINDLE, William
HODGSON, William H.
HOLLINGWORTH, Arthur
HOLT, Charles H.
HONAN, Frank J.
HOPKINS, Henry W.
HORAN, William A.
HOUGHTON, Montafix W.
HOUSTON, Craig S.
HOWES, Seth F. H.
HOYE, Henry J.
HUDSON, Royal C.
HUGHES, Stephen F.
HUGHES, Wm. Newton
HUNT, Russell R.
HUNT, William W.
HUSSEY, Frederic V.
HYER, Harrison F.

ISRAEL, Cyril

JACKVONY, Albert H.
JACOBSON, Frank J.
JACOBY, Douglas P. A.
JOHNSON, Linwood H.
JOHNSTON, Joseph C.
JONES, Henry A.
JONES, John Paul
JONES, Walter S.
JORDAN, Harmon P. B.
JORDAN, William H.
JOYCE, Henry S.

KECHIJIAN, Harry M.
KECHIJIAN, Natalie
KEEFE, Patrick H.
KELLEY, Jacob S.
KELLY, Earl F.
KENNEDY, Thomas F.
KENNEY, John F.
KENNEY, John J.
KENNEY, Stephen A.
KENNON, Charles E. V.
KENT, Joseph C.
KERNEY, J. Edwards
KIENE, Hugh E.
KING, Francis J.
KING, William A.
KINGMAN, Lucius C.
KNAPP, Harry J.
KRAEMER, Richard J.
KRAMER, Louis I.
KROLICKI, Thaddeus A.

LADD, Joseph H.
LALONDE, Alphonse J.
LALOR, Thomas J.
LAMOUREUX, Stanislas A.
LANGDON, John
LAWSON, Herman A.
LEECH, Clifton B.
LEET, William L.
LENZNER, Simon G.
LEVY, William S.
LIBBY, Harold
LITTLEFIELD, Frank B.
LOBO, Jose P.
LONDERGAN, James P.
LORD, Robert M.
LUFT, Raymond
LUONGO, Fedele U.
LUPOLI, Alphonse W.
LUTZ, Frank L.
LYNCH, John P.

MACK, John A.
MacCARDELL, Frank C.
MAC LEOD, Norman M.
MAGILL, Wm. H.
MAHONEY, Andrew W.
MAHONEY, Michael P.
MAHONEY, William A.
MARA, Earl J.
MARGOSSIAN, Arshag D.
MARKS, Herman B.
MARQUIS, Edward
MARTIN, Arthur E.
MARTINEAU, Lawrence A.
MATHEWS, Frank H.
MATHEWS, George S.
MATHEWSON, Earl J.
MATTEO, Frank I.
McALPINE, Alfred F.
McCABE, Francis J.
McCAFFREY, Jerome J.
McCANN, James A.
McCARTHY, James M.
McCOART, Richard F.
McCOOEY, James H.
McCURDY, Gordon J.
McCUSKER, Henry F.
McDONALD, Charles A.
McEVOY, Frank E.
McGRAW, George B.
McGUIRK, William R.
McKENNA, Frank A.
McLAUGHLIN, Edward A.
McLAUGHLIN, William H.
MEDOFF, Edward B.
MELLONE, John A.
MELVIN, Edward G.
MERCHANT, Marcius H.
MERDINYAN, Ardashes H.
MERRILL, Whitman
MESSINGER, Harry C.
MIGLIACCIO, Anthony V.
MILAN, Michael B.
MILLER, Albert H.
MILLS, Parker
MINER, Harold C.
MISSIRLIAN, Mihran
MONAHAN, John T.
MONTI, Victor H.
MOOR, Henry B.
MOORE, James S.
MOREIN, Samuel
MORI, Laurence A.
MOWRY, Classen
MOWRY, Jesse E.
MUNCY, William M.
MUNRO, Walter L.
MURPHY, John F.
MURPHY, Robert G.
MURPHY, Thomas H.
MURPHY, Thomas Henry
MYERS, Edward L.

NESTOR, Michael J.
NEWSAM, Arthur R.
NICHOLS, Ira C.
NOURIE, Joseph P.
NOYES, Ira Hart

O'BRIEN, James P.
O'CONNELL, Francis D.
O'CONNELL, Joseph C.
O'CONNOR, John V.
O'CONNOR, Michael J.
ODDO, Vincent J.
O'NEIL, Michael J.
O'NEILL, Joseph B.
O'ROURKE, Charles B.
O'ROURKE, Patrick I.

PALMER, William H.
PARDEE, Katherine
PARKINSON, James M.
PARTRIDGE, Herbert G.
PEARSON, Rudolph W.
PEDORELLA, Americo J.
PELLETIER, Emery
PERKINS, Jay
PERRY, Charles F.
PETERS, John M.
PETRUCCI, Ralph J.
PHILLIPS, Charles L.
PICKLES, Wilfred
PITTS, Herman C.
PLATT, Marden G.
PORTER, Emery M.
PORTER, Lewis B.
POTTER, Alfred L.
POTTER, Edgar S.
POTTER, Henry B.
POTTER, Merle M.
PRIOR, James H.
PUTNAM, Helen C.

QUESNEL, Ernest J.

RAIA, Joseph E.
RANDALL, Arthur G.
RAYMOND, Charles N.
REGAN, John F.
REGO, Rodrigo P. da C.
REGO, Victor P. da C.
REILLY, Joseph W.
RICE, William O.
RICHARDSON, Dennett L.
RILEY, Clarence J.
RITTNER, Mark
ROBERTS, William H.
ROBINSON, Robert C.
ROCHELEAU, Walter C.
ROGELL, Harold
RONCHESE, Francesco
ROSE, Alanson D.
ROSS, Florence M.
ROSWELL, Joseph T.
ROTHWELL, William P.
ROUNDS, Albert W.
RUEST, Florian A.
RUGGLES, Arthur H.
RUISI, J. E.
RUSSELL, Amy H. E.
RYAN, J. Francis
RYAN, Vincent J.

SAKLAD, Meyer
SANBORN, Harvey B.
SARGENT, Francis B.
SAWYER, Carl D.
SAYER, Edmund A.
SCANLAN, Thomas F.
SCANLON, Michael H.
SCORPIO, Angelo
SHARP, Benjamin S.
SHARP, Ezra A.
SHATTUCK, George L.
SHAW, Eliot A.
SHERIDAN, James J.
SHIELDS, William P.
SIELKE, Eugene L.
SMITH, Clara Loitman
SMITH, Frederick A.
SMITH, George R.
SMITH, Joseph
SMITH, Orland F.
SMITH, Robert M.
SMITH, Thomas J.
SOUTHEY, Charles L.
SPERBER, Perry
SPRAGUE, Stanley
STEWART, Charles W.
STONE, Ellen A.
STONE, Eric P.
STOOPS, William A.
STORRS, Berton W.
STREKER, Edward T.
STREKER, William S.
STURGIS, Karl B.
SULLIVAN, Michael H.
SUMBERG, Elizabeth H.
SUNDIN, Axel K. H.
SWEENEY, John W.
SWEET, Charles F.
SYLVIA, Charles A.

TAGGART, Fenwick G.
TANGUAY, Joseph E.
TARTAGLINO, Alfred M.
TATUM, Julianna R.
TEEHAN, George E.
TEFFT, Benjamin F.
THEWLIS, Malford W.
THOMPSON, Edwin G.
TINGLEY, Louisa Paine
TOWLE, Bernard L.
TRAINOR, Edward H.
TREMBLAY, Euclide L.
TRIEDMAN, Harry
TROPPOLI, Daniel V.
TURCO, Salvatore J. P.
TURNER, Charles S.
TURNER, Howard K.
TURNER, Joseph L.

UTTER, Henry E.

VAN BENSCHOTEN, George W.
VANCE, Michael E.

WALSH, John G.
WATERMAN, George W.
WEBBER, Joseph B.
WEBSTER, Frederick A.
WEEDEN, Allen A.
WEIGNER, Walter C. H.
WELCH, Stephen A.
WELLS, Guy W.
WESTCOTT, Clinton S.
WESTCOTT, Niles
WEYLER, Henry L. C.
WHEATON, James L.
WHITE, George F.
WHITMARSH, Robert H.
WILCOX, Roswell S.
WILLIAMS, Harold W.
WILLIAMS, Pearl
WINDSBERG, Eske H.
WING, Elihu S.
WINKLER, Herman A.
WISE, Bernard O.
WITTES, Saul A.
WOODMANSEE, Clarence H.

YOUNG, George L.
YOUNG, John A.

ZAMBARANO, Ubaldo E.

RHODE ISLAND MEDICAL SOCIETY

Minutes of the One-hundred and Twenty-eighth Annual Sessions

Report of the Secretary

Since our last annual meeting the Council and House of Delegates have met three times. Because the Rhode Island Medical Society usually meets but once a year and the governing bodies three times a year much of the work is carried on by various committees. This year has been a particularly active one for some of the committees. Your Secretary wishes to express now his appreciation for the time and hard and conscientious work put in by members of these committees. Most of the work of committees is scarcely ever heard of by the individual members of the Society. With the increasing burden thrust upon the State Medical Society the work will be even greater and before long the Society should look to some means of aiding and coordinating the work of the committees and of bringing to the attention of the members the objectives and accomplishments of state organization. This would do a great deal to make the Rhode Island Medical Society an effective unit for improving the health of this community and a deterrent to those who would place other interests first.

The Committee on Hospital Insurance has worked long and arduously. It has brought forth a plan that protects the interests of both the patient and the doctor. However, the Committee's vigilance is as necessary as ever to protect the public against changes that in the end will be inimical to their health. In other words Health Insurance must be used to practice good medicine rather than commercial medicine. The Committee on Social Security gave an exhaustive report which has been sent to each district society secretary. I hope each member has not only heard but has read the report carefully. It is an important document for it quite well defines the attitude of the Rhode Island Medical Society toward Social Security.

On January 6, 1939 the Society departed from its usual custom and held a mid-winter meeting for the general membership. Dr. Rock Sleyster, President-elect of the American Medical Association, reviewed the steps taken by the Association to improve the quality of medicine. He mentioned particularly the support the Association had accorded the Department of Public Health, the Control of Infectious Diseases, the improvement of Medical Education and the 300 plans now in operation to care for the needy and indigent. He emphasized that medicine had risen far higher under the guidance of the American Medical Association than it ever had in Europe under control of governmental agencies. The address was liberal, thoughtful, and free from exaggeration.

Recently in accordance with a suggestion by the Council, the presidents and secretaries of the district societies held an informal meeting to discuss ways of making the Rhode Island Medical Society a more effective organization. Each secretary returned to his district society for discussion of the various plans presented. It was felt the delegates of the component societies could then be instructed and could carry to the State Society the wishes of its members.

To me the meeting of the secretaries and presidents was one of the most important steps taken this year. I hope the state society may soon sponsor, at least once a year, such a gathering. I think every individual went away with a definite feeling of responsibility for the welfare of the state society and a fairly clear notion of how to improve its work.

I regret to report that eighteen of our members have died and three others have resigned. Seventeen new members have been added, making a total of 486.

Respectfully submitted,

GUY W. WELLS, M.D.

Secretary.

Report of the Committee on Exhibits 1938-1939

Following the death of Dr. Skelton in the summer of 1938 the President appointed Dr. Bradley Chairman of the Committee on Exhibits to succeed Dr. Skelton, and throughout the year the Committee has worked on preparations for commercial exhibits at the 1939 Annual Meeting of the Society. A floor plan of the medical library building has been prepared in convenient size and black-line copies made for distribution to prospective exhibitors. A complete set of regulations governing all exhibits was prepared, mimeographed, and sent to all prospective exhibitors. For this year no change in rental rates was inaugurated and preference for space was given to exhibitors who have been with the meetings in previous years. In conformity with the custom of most other state medical societies,

arrangements were made to collect all rental fees in advance of the meetings and a certain amount of portable but permanent fixtures for use in connection with the exhibit were constructed. A system of registration for all visitors to the meetings was inaugurated so that statistical data will be available in connection with future meetings.

All available exhibition space was very promptly reserved by various commercial firms and it is the opinion of the Committee that this aspect of the meetings could be very profitably expanded were not the space for commercial exhibits so limited in the Medical Library building.

Respectfully submitted,
CHARLES BRADLEY, M.D.,
Chairman.

Report of the Library Committee

Books and Journals catalogued to date		16,909
Transactions, Reports, etc. partially catalogued		3,113
Number of books received:		
(Gifts and review)	1,207	
(Purchased)	23	
		1,230

Also, a large number of unbound journals, pamphlets and reprints.

Journals received through subscription and exchange	114
Books repaired at State House Bindery, WPA	100
Journals converted by binding	118

All Rhode Island Medical Journals and Fiske Fund Essays, formerly stored in boxes in the packing room, have been sorted, listed, and placed in packages on shelves, where they can be reached easily if needed.

Visitors—1,992 to May 15—more than one-half seeking Bibliographic references.

At the suggestion of some members of the Medical Society, the library was open in the evening, twice weekly, during the winter months. A total of 13 visitors availed themselves of the use of the reading room on the 26 nights the library was open.

The special cataloguing fund is nearly exhausted. Some way should be devised to continue this invaluable work during the coming year.

Respectfully submitted,
JOHN G. WALSH, M.D.,
Chairman.

Report of the Committee on Annual Clinics

The Committee on Annual Clinics met on April 28, 1939 with the result that the following letter was sent to the various hospitals concerned. Each hospital has accepted its assignment and their programs have been submitted to the Secretary.

After considerable deliberation your committee for clinics at the annual meeting of the Rhode Island Medical Society has reached the conclusion —that for the next two years the clinics of the eight hospitals in or near Providence shall be divided as follows into four a year:

1939

Wednesday morning:	Thursday morning:
Chas. V. Chapin Hosp.	Rhode Island Hospital
St. Joseph's Hospital	Miriam Hospital

1940

Homeopathic Hospital	Memorial Hospital
Prov. Lying-in Hosp.	Butler Hospital

This decision has been reached for several reasons.

(1) that too many clinics have divided the attendance so much that the small hospitals were put to a great disadvantage.

(2) that the effort made by some of these hospitals to put on a favorable show was wasted and placed the staff of these hospitals in a position of utter dissatisfaction with the whole scheme.

(3) that the new schedule would give the small hospitals a chance to extend themselves to an advantage to themselves as well as a chance for the general medical profession to view the stimulated efforts to their own mutual benefit.

It was with some hesitation that your committee devised this schedule but we hope that all the hospitals will cooperate and will signify any contrary opinions at once or otherwise abide by this decision. Signed for the committee on clinics of the annual meeting.

Respectfully submitted,
BERTRAM H. BUXTON, M.D.,
Chairman.

Report of the Grievance Committee

Throughout the year the Grievance Committee was inactive due to the fact that no business was referred to it for action.

Respectfully submitted,
FREDERIC V. HUSSEY, M.D.,
Chairman.

Report of the Publication Committee

The Committee on Publications reports, supplementary to the report of the Treasurer for the year 1938, that on May 10th, setting aside money due to the Editor which at that date had not been paid him, there was owed to the printer $183.09. Cash on hand—$157.33. The money due to the society from advertisers was more than enough to meet the printer's bill and the bill for the May issue not then out. At present, the monthly income from advertising is slightly more than the expenditures for printing, editing and mailing.

Dr. Albert Miller has served throughout the year as Editor, maintaining an improved journal. Without him, it would have been difficult to keep the Journal in existence to say nothing of maintaining its present status.

The Editor needs clerical and secretarial help. It is hoped that some arrangement can be made to provide that. An assistant to the present secretary or an executive secretary could answer routine communications and solicit local advertising. Such help or the employment of a business manager will at first run the expenses up, beyond the income.

The mailing list of the Journal has been brought up to date. We ask the cooperation of the District Societies to help increase the membership in the state society. At present, the Journal is sent to all members of the district societies including those not members of the state society. To meet the requirements of the United States postal laws this practice will have to be stopped. In order to meet these same requirements and because we want an even better Journal and in support of an Editor who is working hard to give us a Journal worthy of the society, we have asked the Council to set aside, as a separate fund, allocated to the Journal, the sum of one dollar ($1.00) for each member, this to be a block subscription to the Journal. This money would belong to the society unless, or until, spent and any money not spent would be returned to the regular society funds at the end of the year. Even if, in this coming year, part or all of that money is spent the society gets its transactions published, the members get a journal worth the price and in our library we get about fifty exchanges many of which are valuable and the loss of which would be unfortunate.

Respectfully submitted,

HARRY C. MESSINGER, M.D.,
Chairman.

Report of the Committee on Education

Herewith is submitted the report of the Committee on Education of the Rhode Island Medical Society for the year commencing June 1, 1938. The Committee has carried on the tradition of biannual medical lectures for the general public given during the months of November and March. These lectures were held at the Rhode Island Medical Library on Sunday afternoons at 3:30 o'clock. The following subjects were presented during the month of November:

1. Lessons in Heart Disease.
2. Diseases of the Thyroid Gland.
3. Allergy in Children.
4. Medical Diagnosis from a Laboratory Standpoint.

This past March all of the medical lectures at the Library were illustrated with motion pictures which were donated through the courtesy of the Metropolitan Life Insurance Co. The subjects under discussion were:

1. What You Should Know About Tuberculosis.
2. Acute Appendicitis.
3. Preventing Diseases Today.
4. The Value of Periodic Health Examinations.

These formal lectures at the Medical Library drew only a moderate attendance. They have been falling off slightly for the past year or two possibly due to the increased interest which is taken in the radio. However, your Committee feels that these lectures are of great value and serve a very definite purpose.

In addition to the formal lectures your Committee this year returned the Rhode Island Medical Society to the air. Through the courtesy of Station WPRO we were given fifteen minutes every Sunday afternoon commencing the 11th of December and since that time the following radio talks have been presented:

1. Introductory Remarks explaining what the Rhode Island Medical Society is and its relationship to the American Medical Association and its component district societies was given by Dr. Brackett, president of the the Rhode Island Medical Society. He was followed by Dr. Charles Bradley who spoke on the subject "The Nervous Child."
2. Cancer—Its Treatment by X-ray and Radium.
3. The Truth about Indigestion.
4. The Care of Your Skin.
5. The Family Medicine Chest.

6. Your Gallbladder in Health and Disease.
7. What is Arthritis?
8. The Sense and Nonsense of Dieting.
9. Acute Catarrhal Fever.
10. The Early Recognition of Cancer.
11. Infections of the Hand.
12. The Tyranny of Fear in Children.
13. Hernia or Rupture.
14. That Bogey, Pneumonia.
15. What You Should Know About Heart Disease.
16. What You Should Know About Sinus Trouble.
17. Relaxation and Sleep.
18. The Eyes Have It.
19. Dentistry in General Health.
20. Modern Care in Childbirth.
21. Constipation.
22. Anesthesia.
23. The Treatment for Sprains and Joint Injuries.
24. Your Kidney Tract.

These radio lectures have apparently commanded a large audience as we have received over five hundred requests for copies of these talks from as many remote places as California, Louisiana, Maine, and Florida, with the greater bulk of the requests coming from the New England States and in particular from Rhode Island. It is fair to assume that the few who have taken the trouble and money to request copies have represented only a very small part of the interested radio audience which has looked forward every Sunday to these talks. The Committee would, therefore, suggest that they be continued. These radio talks have been given by speakers from every medical society in the State of Rhode Island and one speaker from the Rhode Island Dental Society and truly represent the Society as a whole before the public.

We wish to express our thanks to Station WPRO for its courtesy in giving us time, to Blanding & Blanding, Inc., for the advertising which has been freely contributed, and to the many members of the profession who have by their cooperation and suggestions been of invaluable aid.

Respectfully submitted,

Jesse P. Eddy, 3rd, M.D.,
Chairman.

Report of the Committee on State Policies of Public Health

This Committee was appointed by the President of the State Society at the request of Governor Vanderbilt for the purpose of acting in an advisory capacity to the Governor on situations involving interests of the medical profession of the State.

Soon after its appointment the Committee was requested to look into the situation as regards men qualified to serve as Director of Public Health. At a meeting of the Committee, two qualifications were determined upon which in the opinion of the Committee were essential in the appointment of such director.

1. The appointee should be a graduate physician.
2. He should have training and experience in public health work.

With the cooperation of the President of the Rhode Island Medical Society, the Committee spent a great deal of time and effort in investigation of various physicians and, at the request of the Governor, submitted to him the names of three men which exceedingly well fulfilled the qualifications as determined by the Committee. Meetings were held with the Governor and a hearing was had before the Steering Committee of the Senate in an effort to bring out support for the confirmation of the Governor's appointment of one of the three men whose names were submitted.

Our inability to bring that about the Committee thinks was due to two things—

1. That the men whose names were submitted to the Governor were not resident physicians of the State, and,
2. The opposition of a powerful bloc of Senators who would not support the Governor's appintment of a non-resident.

The Committee also collaborated with the Committee on Legislation in its attempt to secure passsage of the Basic Science Bill.

In addition to that, the Committee was also consulted in regard to the appointment of the members of the Board of Medical Examiners.

While the Committee was not consulted frequently, in those matters in which its opinion was requested, the Committee feels that it spent considerable time and great effort in the interests of the State Medical Society.

It regrets that owing to obstacles which it could not overcome, it was not more successful in its efforts.

Respectfully submitted,

Frederic V. Hussey, M.D.,
Chairman.

Report of the Legislative Committee

The following health measures were passed by the State Legislature:

Senate Bill No. 23: An Act in amendment of and in addition to Chapter 153 of the General Laws, entitled "Of the Department of Public Health," as amended.

This Act amends the Laws to provide "The State Department of Health shall be authorized to submit reports of cases of tuberculosis which it receives and has on file in its register to city and town health departments and to other community agencies, voluntary and official, properly organized to receive such reports and capable of maintaining an adequate system of tuberculosis control within its community."

House Bill No. 782: An Act to provide a lien in favor of hospitals for services rendered to persons injured as the result of an accident. This lien follows after all legal expenses are deducted.

House Bill No. 798: An Act in amendment of Sections 3, 4, 7, 8, 11, 17 and repealing Section 18 of Chapter 169 of the General Laws, entitled "of the regulation and practice of Dentistry," as amended. This abolishes cheap advertising, such as display signs, etc.

Senate Bill No. 262: An Act in amendment of Section 22 of Chapter 108 of the General Laws, entitled, "Of the restraint and cure of the insane and of public provisions for the indigent insane," as amended. By this Act insane non-resident cases are turned over to the states in which they are legal residents.

House Bill No. 890: Substitute A — An Act creating a State Board of Veterinarians, and regulating the practice of veterinary medicine, surgery and dentistry.

House Bill No. 983: An Act in amendment of Sub-division (14) of Section 2, Sub-divisions (1) and (2a) of Section 7, sub-division (1) of Section 17, and Section 19 of Chapter 273 of the General Laws, entitled, "Licensing and regulation of the sale and dispensing of narcotic drugs," as amended.

House Bill No. 750: Substitute A — An Act repealing Sections 11 to 17 inclusive, Sections 19 to 23 inclusive, and Section 30 of Chapter 11 of the General Laws, entitled "Medical Examiners and Coroners," renumbering certain sections of said Chapter and changing the title to read, "Medical Examiners:" amending also Section 3 of Chapter 491 of the General Laws and Section 12 of Chapter 268 of the General Laws and Section 10 of Chapter 633 of the General Laws. This bill abolishes the office of coroner.

Senate Bill No. 181: Substitute B — The so-called Basic Science Act, passed the Senate and died in the House Judiciary Committee.

There were also other health bills sponsored by the osteopaths, chiropractors, naturopaths, and optometrists, all of which died in Committees.

This Committee wishes to express its appreciation for the great interest and untiring efforts of the Executive Secretary of the Providence Medical Association, Mr. John Farrell, in aiding us in this work.

Respectfully submitted,

HERBERT E. HARRIS, M.D.,
Chairman.

Report of the Cancer Committee

The Cancer Committee of the Rhode Island Medical Society had several meetings with the Advisory Committee of the Women's Field Army, Rhode Island Unit. At these meetings the policy for the work of the Women's Field Army was discussed and many details agreed upon.

The Committee had only one meeting as a separate committee on May 9, 1939. At this meeting three important proposals were made by motion and adopted.

The first was that the Editor of the *Rhode Island Medical Journal* be requested to carry a short editorial or short article on some phase of the cancer problem monthly.

The second was that the President of Brown, Rhode Island State, Providence College, and the Rhode Island College of Education be consulted as to the advisability of starting a short course on cancer in their various institutions. This would be an optional course and would be given preferably to students taking premedical courses.

The third motion was a suggestion to the Director of Public Health that all hospitals and Tumor Clinics in the State be requested to report new cases of cancer monthly. This, the Committee thought, would give a better idea as to the number of cancer cases present in Rhode Island.

It is requested that the present Committee be continued.

Respectfully submitted,

HERMAN C. PITTS, M.D.,
Chairman.

PAWTUCKET MEDICAL ASSOCIATION

The regular meeting of the Pawtucket Medical Association was held at the Nurses' Auditorium of the Memorial Hospital on May 18, 1939. The meeting was called to order by the President, Dr. Thad A. Krolicki, at 9:20 P. M. The minutes of the preceding meeting were read and approved.

A communication was read from the Pawtucket Director of Public Safety asking whether the Association would be interested in arranging a program whereby lectures or instructions would be given to the men of the Police and Fire Departments of the City of Pawtucket with regards to First Aid. The communication was referred to the Committee on Education.

An application for Associate Membership by Dr. B. S. McKendall was presented and referred to the Standing Committee.

Dr. J. N. Corsello read a paper on "Modern Treatment of Pulmonary Tuberculosis."

The meeting adjourned at 11:15 P. M. There were twenty-five members and three guests present.

Collation was served.

Respectfully submitted,

JOHN H. GORDON, M.D.,
Secretary.

PROVIDENCE MEDICAL ASSOCIATION

Minutes of the May Meeting

A regular meeting of the Providence Medical Association was called to order by the President, Dr. H. C. Messinger, at the Medical Library, on Monday, May 1, 1939, at 8:40 P. M. The minutes of the preceding meeting were read by the Secretary and were accepted by the membership.

The Secretary reported for the Standing Committee as follows: That the application of Dr. Frank Smith Hale, recently returned to this state, for re-instatement in the Association, has been approved. That it was the sense of the Standing Committee that the President should express appreciation and thanks in behalf of the Association to the George L. Claflin Company and to radio Station WEAN for their cooperation in making the weekly radio programs of the Association the success that they were. That the President had reported to the Committee that he had authorized the executive secretary to serve as legislative agent for the Providence Medical Association in matters of medical legislation before the General Assembly, and that he had signed such authorization for file at the office of the Secretary of State. The report of the Standing Committee was accepted as submitted.

The President announced that the obituary of Dr. Arthur T. Jones, as prepared by Dr. Albert Miller and Dr. Frederic V. Hussey, was on file with the Secretary.

The President announced that Dr. Walter L. Munro, lifelong friend of the late Dr. Arthur Harrington, had prepared the obituary tribute of his friend, and would read it to the membership. Dr. Munro presented therewith a very complete and intimate tribute of Dr. Harrington who had served for 19 years as superintendent of the State Hospital for Mental Disease.

The President announced that the Committee on the Revision of the Constitution and By-Laws had submitted in writing suggested alterations to the Constitution, to be acted upon by the membership at the June meeting. The Secretary read the amendments as proposed.

The Secretary reported that the Standing Committee recommended for election to membership Dr. John D. Hubbard and Dr. Henry F. Stephens. On the motion of Dr. William Muncy these applicants were elected to membership in the Association.

The President announced the appointment of a committee to consist of Dr. Jesse E. Mowry and Dr. Carl R. Doten to prepare the obituary of Dr. John L. Sprague.

The business meeting being concluded, the President introduced Dr. B. Earl Clarke, who acted as presiding officer for a symposium of "A Review of Glomerular Nephritis," in which Dr. Morgan Cutts discussed the clinical aspects, Russel O. Bowman, Ph.D., the bio-chemical features, and Dr. Clarke the pathological picture of the disease.

The meeting adjourned at 10:40 P. M. Attendance 104. Collation was served.

Respectfully submitted,

HERMAN A. LAWSON, M.D.,
Secretary.

OBITUARY

ARTHUR T. JONES, M.D.

Dr. Arthur Thoms Jones died at his home on Orchard Avenue, Providence, on March 19, 1939, after an illness of several weeks duration. Born in Bangor, Maine, on April 21, 1874, he was the son of the late Alfred and Adeline (Bird) Jones. He attended the public schools of Bangor and the East Maine Conference Seminary at Bucksport. In 1893 he entered New York University from which he graduated in 1896 with the degree of M.D., whereupon he entered the New York Post-Graduate Hospital for special work in obstetrics. He next served an internship at the Rhode Island Hospital and, in 1898, began practice in Providence, associated with Dr. John W. Keefe, as his private assistant.

For many years Dr. Jones served at St. Joseph's Hospital, from 1899 as Assistant Gynecologist, later as Visiting Gynecologist, and finally as a member of the Consulting Staff. He served as visiting Surgeon to the Pawtucket Memorial Hospital from 1911 until his retirement in 1928, then as Consulting Surgeon he maintained an active interest in the hospital and served on the Executive Committee of the Medical Staff until the time of his death. He was a member of the Consulting Staff of the Miriam Hospital, the Woonsocket Hospital, the Westerly Hospital, and the South County Hospital. For forty-two years he did an extensive general surgical and consulting practice, in which he was uniformly successful. His patients became his intimate friends by whom he was greatly loved and admired.

Dr. Jones was a member of the Rhode Island Medical Society, of which he was President in 1923-24, and of the Providence Medical Association, which he served as President in 1915. He was a member of the American Medical Association, the American Urological Association, and the American Association of Obstetricians, Gynocologists and Abdominal Surgeons. He was one of the founders of the New England Surgical Society. In 1913 he was made a Fellow of the American College of Surgeons, of which organization he served as Chairman of the Rhode Island State Committee. In 1937 he became a Diplomate of the American Board of Surgery, Founders' Group.

A thirty-second degree Mason, Dr. Jones was a Past-Master of Adelphoi Lodge, a member of St. John's Commandery, Palestine Shrine, and the Rhode Island Consistory. He was a member of the Anawam Club, the British Empire Club, the Rhode Island Country Club, and a charter member of the Amos Throop Medical Club.

In 1902, Dr. Jones was married to Isabel Louise Burch of Ithaca, N. Y. He is survived by his widow; a son, Robert Burch Jones; a daughter, Mrs. Jesse P. Eddy, 3rd; two granddaughters, Constance Burch Eddy and Ann Louise Eddy; and by two sisters, Mrs. J. W. Harriman and Mrs. Lillie R. Bemis.

Albert H. Miller, M.D.,
Frederic V. Hussey, M.D.

RECENT BOOKS

Microbiology and Public Health. By William Barnard Sharp, S.M., M.D., Ph.D., pp. 492, with 125 illustrations. Cloth, $4.50. The C. V. Mosby Company, St. Louis, 1938.

This handbook is designed to aid the student in organization, interpretation, and systematic record of data from laboratory and field. It covers general bacteriology, vehicles of infection, clinical bacteriology and mycology, immunity, public health laboratory, public health field work and surveys, public health problems, animal parasites and disease vectors. It is an efficient, practical guide for the student and for teachers of bacteriology and preventive medicine.

Standard Bodyparts Adjustment Guide. Fabrikoid, loose-leaf, pp. 170, with 55 illustrations. $8.00, with ten years revision service. Insurance Statistical Service of North America, 542 Rush Street, Chicago, 1939.

This volume, compiled for the use of insurance adjusters should be familiar to every general practitioner of medicine who is called to treat industrial injuries or occupational disease. Dealing with traumatic injuries, evaluations and medical fees, it includes a composite coast to coast average of medical fees for every type of service; a description of miscellaneous traumatic and bone injuries and their resultant disability periods; a persuasive percentage method for evaluating loss-of-use conditions; a comprehensive digest of regulations evolved under compensation statutes; a concise analysis of occupational disease signs, symptoms, and environments; a readable text of 170 pages, keyed to a self-pronouncing glossary; and a realistic reproduction of the incomparable Froshe Anatomical Charts, keyed to Latin and English definitions.



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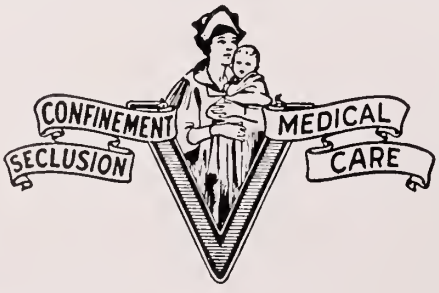
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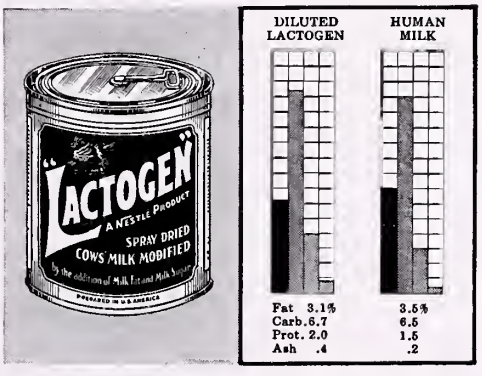
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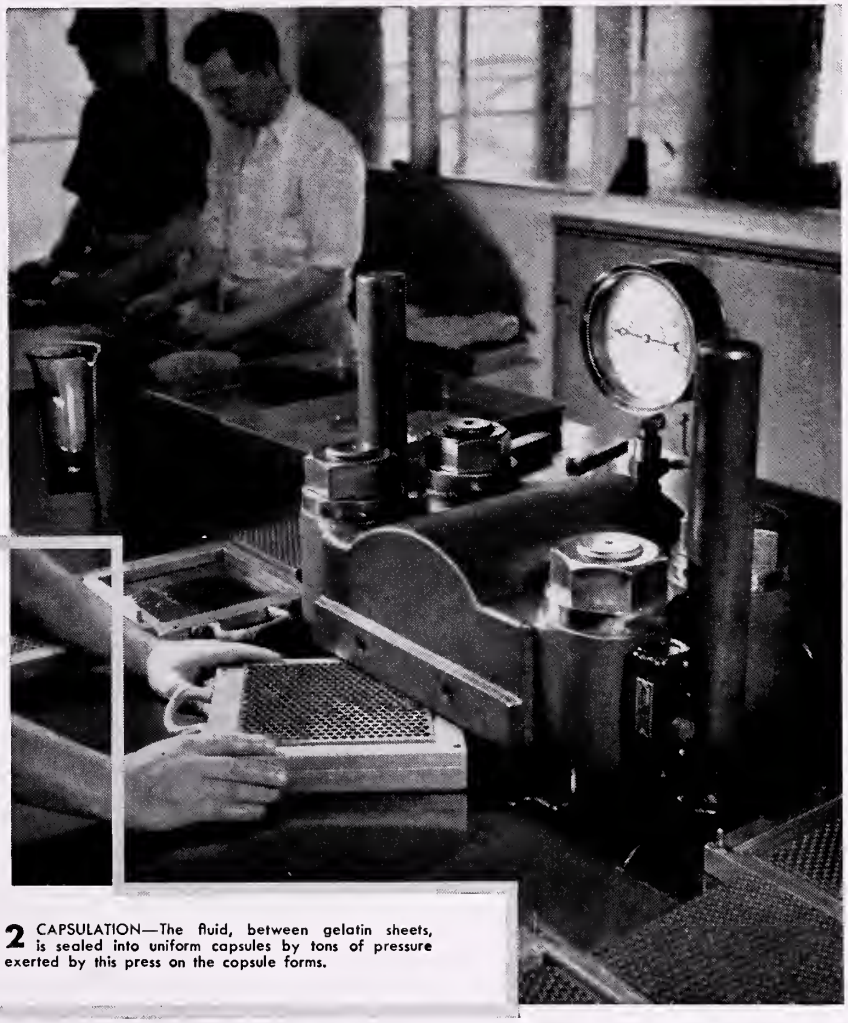
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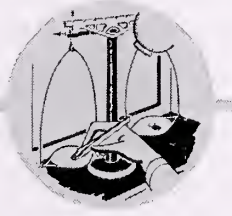
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During periods such as infancy, childhood, pregnancy and lactation, or during convalescence from wasting illness, energy-yielding nutrients are required both for support of body activity and for tissue formation. However, for the average adult, food energy intake should balance energy expenditure. For adults, variation in activity is the chief factor influencing variation in energy requirement; age, sex, size and body build being comparable. Sedentary occupations may require a food energy intake of 2500 calories per day; 5000 calories might be necessary if the individual engaged in strenuous muscular activity. Close approximations are available for the probable food energy requirements of individuals during different stages of the life cycle and engaged in various activities (1, 2).

Experiments (3) have also demonstrated that oxidation of foodstuffs in the animal body—due allowance being made for the energy contents of the end-products of oxidation—yields the same number of calories as are produced by the oxidation of similar foodstuffs in the combustion type calorimeter. Since the potential food energy of foodstuffs resides in their contents of carbohydrates, fats and proteins, the available calorific value of any food may be readily calculated (4) by using the factors 4, 9 and 4 calories per gram of these respective nutrients. Of these food components, the carbohydrates and fats are those which contribute most towards attainment of our varied, food energy requirements. Reliable tables are available (5) which list he calorific contributions of most common foods.

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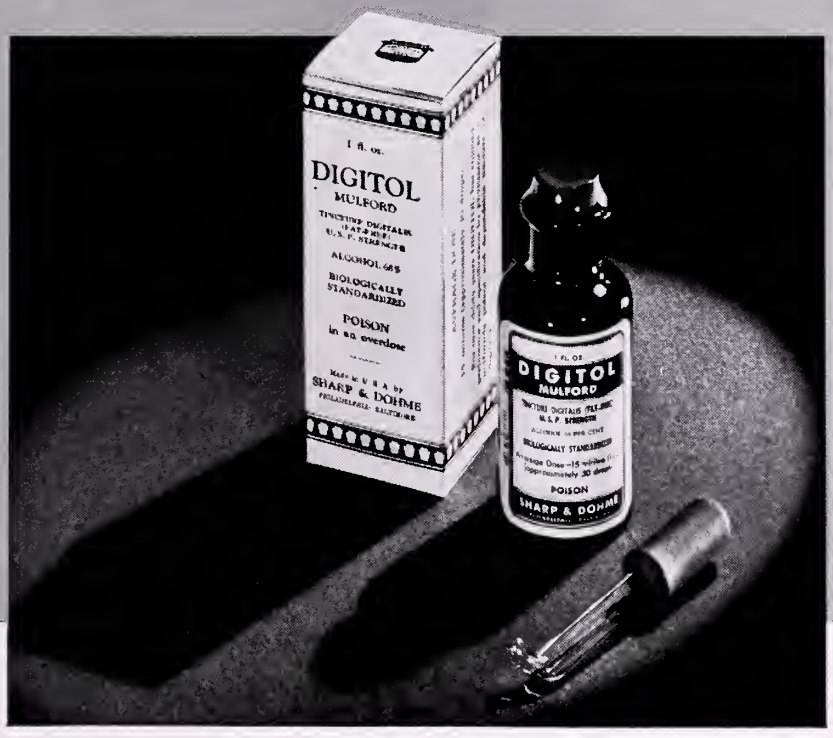
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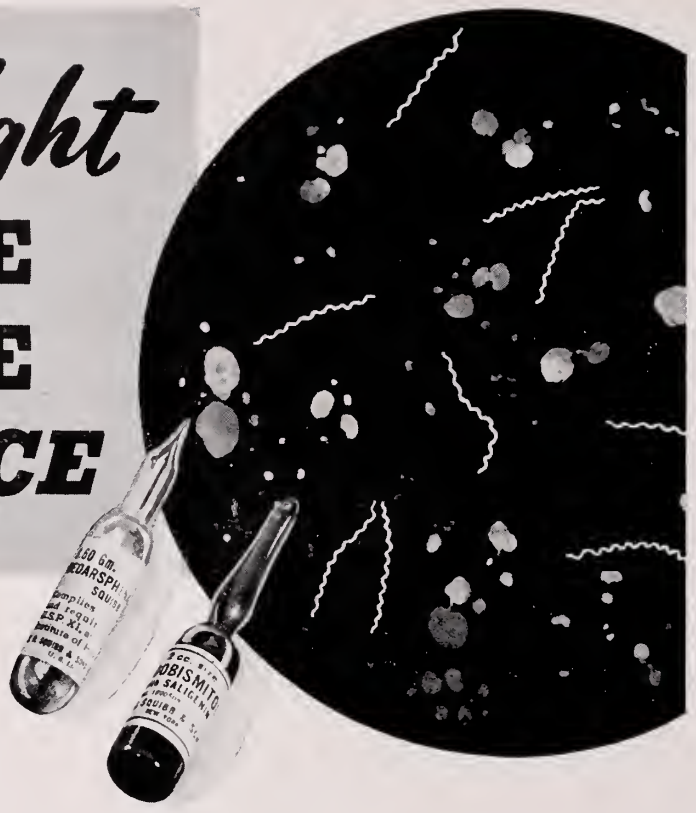
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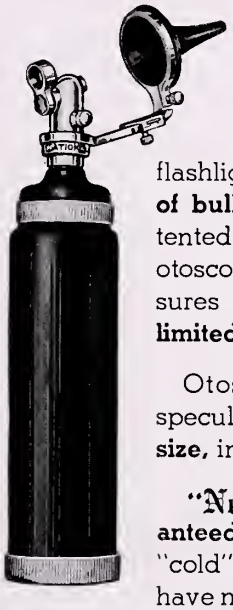
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THE RHODE ISLAND MEDICAL JOURNAL

VOLUME XXII SEPTEMBER, 1939 NUMBER 9

SELECTION OF PATIENTS FOR SURGERY

ELLIOTT C. CUTLER, M.D.
PETER BENT BRIGHAM HOSPITAL, BOSTON, MASS.

It is said, "Strength lies in unity." By this rule Rhode Island has a chief advantage, for its very smallness gives unity and therefore strength. We in Massachusetts, who were your forebears, now look with jaundiced eye upon our predecessors, who, beset by evil spirits and black magic, drove forth your predecessors from our doors. That you should now welcome some of us to your very bosom further betokens the advanced stage of your civilization, as well as your appreciation of the greatest of books, the Bible. We come to you repentant of our sins and grateful for your invitation.

Consider with me this evening the selection of patients for surgical treatment. Offhand this may seem a hackneyed topic, yet we believe there are elements of interest for discussion to all who practice the healing art. The surgeon may appear to have a chief interest, since on his shoulders will surely fall any criticisms should unfortunate sequelae develop. But what of the physician? He is the chief source of supply for the surgeon. He must recognize the dangers of any therapy he recommends, and since he is usually the one first consulted, the therapy he institutes and the drugs he administers may play a major rôle in the final outcome. Should the physician delay in a case of acute appendicitis, he knows the calamity which may befall. But is it any greater calamity if a patient with a renal stone impacted in the ureter is turned away from surgery by a physician? To be sure, death may not come for several years until a blocked kidney and mounting renal sepsis have robbed the patient of any hope of relief; yet the responsibility rests securely with the physician. Thus any discussion in this field affects us all. We present this matter with a great feeling of humility, having made many mistakes ourselves. Failure to carry out a barium enema examination early in the course of study of a patient with silent carcinoma of the sigmoid without obstruction has delayed surgery too long to give relief. Choice of the wrong anesthetic has robbed others of a meager chance at life.

Two important factors continue to change our considerations of the matter under discussion as the years pass by. First, we must hurdle the shift in judgment which arose when anesthesia was introduced as to what disorders and which patients are suitable for surgical therapy. Preceding the days of anesthesia only *emergency* surgery was practiced. This was largely the care of injury, superficial infection, and tumors. The knife was a dreaded and painful weapon, and its possible beneficence could not be visualized through the screen of terror which its use provoked. But with the blessing of anesthesia this objection fell aside. It is true that the darkest days of medicine followed the advent of anesthesia until the relation of bacteria to disease was understood and asepsis was established. A recent study of this period of medical history shows that, whereas in the Massachusetts General Hospital in 1845, the year before ether was developed, only fifty-seven operations were performed, two hundred ninety-three operations were carried out in 1855. The reading of the records of that period is not pleasant. Sepsis of all kinds dogged the footsteps of the surgeon, and one can visualize in case reports the incisive words of the great Velpeau, "A pin prick is a door open to death which widens before the slightest use of the bistoury." Only when asepsis robbed surgery of this terror was *elective* surgery possible. Today elective surgery constitutes the major portion of this form of mechanical treatment. Unfortunately, all physicians do not fully appreciate the distinction between emergency and elective surgery. Surgery is occasionally offered as

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Moseley Professor of Surgery, Harvard Medical School.

Presented before the Rhode Island Medical Society at the one-hundred and twenty-eighth Annual Meeting, Providence, June 7, 1939.

a necessity when there is more than a reasonable doubt that the complaint and its cause are compatible with a happy and useful existence.

The mother who presents her child to a doctor with obvious acute appendicitis is a typical case of emergency surgery. Here the doctor's responsibility is plain. The child must have surgical therapy at once. Should the mother refuse, the physician should persuade the parent to see another doctor and should not rest easy until the surgeon has been selected and the operation is under way. A typical example of elective surgery is cholelithiasis. Many persons in whom gallstones are noted come to autopsy from other causes and yet the clinical history presented no complaints which could, by the longest stretch of the imagination, be attributed to the gallstones. We are not justified in telling patients in whom gallstones are proved by accurate examinations that surgical treatment must be carried out. We cannot honestly tell such patients they will surely die from such stones unless the stones are removed. We can say under certain circumstances that the chances are considerable that stones in the gallbladder may pass into the common duct; that surgery carries a far higher mortality rate when the patient is jaundiced than when he is not; that in those in early adult life the recurring bouts of indigestion during the next twenty years will eventually bring them to a surgeon; and that, therefore, the gallbladder should be removed. But in this type of disease the patient must make the final decision, and the surgeon or physician has no justification for insisting on surgical treatment. As extreme examples of this, I have two patients over ninety with typical biliary histories and findings. Both have been jaundiced. Both showed gross cardiac irregularities. In one case the physician insisted upon surgery. Neither have had surgery, yet both have had a comfortable winter. These cases represent a common fragment of the field of elective surgery in the aged.

A second reason for considering our topic of the selection of patients for surgical treatment is wrapped up in the extraordinary increase in longevity. A baby born in the United States in 1850 had a life expectancy of about forty years. A baby born today can look forward to approximately sixty years of life. At the same time there has been a decrease in the birth rate, and these two factors have operated to produce a tremendous shift in the age composition of the population. In 1850 persons over sixty-five comprised 2.6 per cent of the population. Today they constitute 6.4 per cent, and in 1980 they should have reached 14.4 per cent. In other words, about 8.4 million of our present population of 132 million are sixty-five or over. Forty years hence they will constitute 22 million out of a population of 153 million.

This increase in the life span brings sharply to our attention the importance of medical treatment for the aged. Geratic surgery is to be perhaps a very large part of the work of the surgeon of the future. Already the surgical literature abounds with studies of this important phase of medical practice, and the medical student of today must envisage an entirely different point of view than that taught to most of us twenty to thirty years ago. He must begin to appreciate that a conservative attitude based merely on the addition of years may rob persons of much comfort and happiness. He must learn to appraise the patient irrespective of his years. All of us unconsciously do this, and all of us recall tough old people whose risk is less than that of many fat, sleek, sedentary folk whose ownership of an automobile has not only wasted their lower extremities but so reduced their capacity for effort that their circulatory response has become seriously impaired. Lacking the physiological stimulation of effort with its resultant appetite and clear thinking, they seek a return to their earlier vigor in increasing resort to alcoholic stimuli and thus sink deeper into their mounting obesity, shiny skin, and false psychological security. Whoever saw a good life insurance risk over fifty whose weight approached two hundred pounds? No, it is the tough, thin, scraggly ones who hang on like tough oaks, nourished well even by a thin soil and diet which keeps them scrambling to maintain their vigor. In the words of James Paget, "Years, indeed, taken alone are a very fallacious mode of reckoning age: it is not the time, but the quantity of a man's past life that we have to reckon. * * The old people that are thin and dry and tough, clear-voiced and bright-eyed, with good stomachs and strong wills, muscular and active, are not bad; they bear all but the largest operations very well. But very bad are they, who, looking somewhat like these, are feeble and soft-skinned with little pulses, bad appetites, and weak digestive power: so that they cannot, in an emergency, be well nourished."

These introductory remarks concerning elective surgery and surgery in the aged will, I hope, emphasize our topic, "The selection of patients for surgery." Our title might well have been "Preoperative study" or "Improving the surgical risk" only that the physicians here would have then thought, "This is just another surgical paper which we must sit through!" The truth is I wish the physician who constitutes the backlog and balance of American medicine to see his share in these problems. Surgery is a dangerous means of therapy. No patient should be put to this risk unless there is adequate cause. And when the risk must be taken, every safeguard must be set up in advance of the ordeal. Only with this attitude can modern medicine and surgery progress. And it is not only a question for the surgeon, for the physician who advises surgical therapy must be equally able to appraise the risk before he instills unwarranted hope in his patient and the family. This is a responsibility we must shoulder jointly.

Any discussion of the preoperative study and care of the patient makes it very clear that the chief considerations, which have to do with the patient before he is submitted to a surgical ordeal, are of a physiological nature. To be sure there are two great groups of surgical patients, those who are *poor risks* and those who are *good risks;* but just because a patient is a good risk is no reason for neglecting the proper preoperative treatment which will render him a still better risk. We can perhaps do very little in the way of lessening the risk of the emergency case as opposed to a case in which the operation is one of election, but even in the emergency case some benefit may accrue from a proper evaluation of the patient's physiological status as contrasted with his anatomical status. The ideal considerations surrounding a satisfactory surgical risk permit a patient to come to operation *with the tissues adequately supplied with fluid, the food reserves in their normal state, the metabolism adjusted as perfectly as it may be, the intestines working normally, the circulation at its optimum level, and a nervous system as undisturbed and peaceful as in daily life.*

Examples of the dangers attendant upon surgry in patients who are desiccated or whose food reserves are impaired are frequently seen. Consider a patient with chronic obstruction at the pylorus due to long-standing ulcer with cicatrization, or a patient with obstruction at the ileocecal valve from cancer of the cecum. If the vomiting has occurred over a long period of time, the relations of plasma to cell volume in the blood may be seriously changed, the urine concentration is high, alkalosis appears from loss of chlorides, and even the relation of tissue protein to plasma protein becomes dangerously altered. All these untoward changes may be modified or reversed by proper preoperative therapy, and the risk of surgery may be tremendously reduced. When we consider surgical intervention in individuals with an unsuspected high basal metabolic rate determination we court the disaster of a post-operative thyroid "storm." This thyrotoxic condition may remain unsuspected until the patient reaches the operating room anesthetized. A glance at the alarming rise in pulse rate and pulse pressure as seen on the anesthesia chart will certify to the diagnosis. It is a hard task for the surgeon to be prepared with a full team at the table and then have to call off the surgical procedure. But this must be the attitude of the conscientious surgeon. There is no place in American medicine today for the person who will take any unnecessary risks with the lives of others. And when we consider surgery in those with an impaired circulation we must expect pulmonary disabilities, embolism, and the other sequelae to surgery which depend in part upon this circulatory failure. Here is a special field for the assistance of our internest colleagues in our great responsibility. Much can be done before the ordeal to diminish the risk in such cases.

Only thirty years ago it was customary to withhold water and food for at least a day before the surgical ordeal and also to purge the patient deliberately. This preparation was based on the assumption that postoperative vomiting and distention were less likely to occur if the intestines were empty. At that time the dangers of dehydration and starvation and the actual condition both of the innervation of the gut wall and of the intestinal contents after purgation were not understood. The importance of a normal level of the constituents in the blood serum was unknown, and satisfactory tests for blood volume, circulatory efficiency, the basal metabolic rate, and the function of the autonomic nervous system were not established.

It is not our purpose to enter into a detailed discussion of all these matters, but it is wise to emphasize that a previously normal patient who suddenly experiences an accident of physical nature, such as rupture of a duodenal ulcer, and who requires immediate surgical therapy without preparation, frequently suffers the minimum of postoperative difficulties. Conversely, it is well recognized that a long period of hospitalization before the surgical operation, particularly if it necessitates bed rest, is undesirable. Also we must recall that certain types of disease present a more serious risk than others. It is recognized that patients with exophthalmic goiter are a grave responsibility, and experience has shown that such patients do better if they are as little disturbed from their daily routine as possible. Thus it is customary to make no special local preparation for them the day before or the morning of the operative ordeal. These examples seem to indicate that the less preparation, the better the result; and they should at once put an end to preoperative preparations which in any way disturb the patient from his routine of living. The fact that a patient with inguinal hernia is a simple, safe risk, and can tolerate with safety enemata, special preparation of the operative field, a shift in diet, and a period of bed rest does not justify an arduous and annoying preparation. There can be little doubt that the sins of commission are just as great in this relation as the sins of omission. This introduction should serve to reemphasize the great natural law we all should follow,—videlicet, that nature tends to repair and heal all of the lesions to which man is subject and that the doctor should devote his energies chiefly to assisting nature in her way, and that conversely he should not attempt to do anything arbitrarily or without guidance from nature.

In a presentation of special indications for preoperative and postoperative care it seems wise to divide the material into three major groups, each of which presents certain general problems: (1) infants and children, (2) adults, and (3) the elderly.

(1). In the youngest age group the rapidity of reaction is characteristic and often alarming. One sees explosive response to infection, a greater imbalance with restriction of the usual fluid and food intake, the danger of long hospitalization as regards susceptibility to infection, poor resistance to trauma, the necessity for avoiding pain with dressings, et cetera. In this group attention to correction of the preoperative imbalance of fluids and blood chemistry has been shown to decrease tremendously the risk of surgery. Even in the face of serious intra-abdominal infection or of intestinal obstruction as with intussusception an hour's delay, if it permits the fluid and chemical relationships to be brought to normal is sometimes of life-saving importance.

(2). With the adult group the surgeon will find his safest field, though the addition of sex life and its profound physical and mental ramifications must be given thorough consideration. But even if this group is, as a rule, safe, it should not give a false sense of security to the physician. Many people have impaired renal or cardiac function in whom no suspicion of trouble has ever arisen, therefore tests for such functions should be a routine part of the selection of patients for surgery. Clinical impressions are after all only impressions and hunches unless they are backed by tests, such as measurements of the vital capacity, the speed of the circulation, and the basal metabolic rate.

(3). The elderly will always demand a longer period of preoperative observation and study than the other groups. In this group the aging process has already affected perhaps several important viscera. The circulatory system in particular must be carefully appraised, and the anesthesia and type of procedure adjusted to its defects. Thrombosis constitutes a major risk in this group, and every attempt must be made to diminish the danger of this occurrence. Digitalization should be considered in any patient over fifty. In spite of the medical dictum that digitalis does not benefit the normal mechanism, there is the clinical experience of many surgeons that digitalis or thyroxin in elderly people seems to assist in avoiding pulmonary complications and other sequelae which, in part, depend upon an inadequate circulation. A long period of rest in bed before surgery inevitably reduces the circulatory rate and the general tone of this important system, and should always be avoided when possible. During the operation special care must be given to the great venous channels, and after the operation every attempt must be made to avoid circulatory congestion, both general and local. Frequent change of position is of assistance, and indeed, is an essential part of the care of aged poeple. This is best accomplished by limiting such patients to short periods in bed irrespective of the procedure. Where early activity is planned, abdominal wounds should

be closed with many tension sutures, either silkwormgut or wire, including all layers so that there may be less danger of wound rupture and evisceration. Habits of food and fluid intake and of bowel movements must be carefully appraised and continued without deviation whenever possible. Obviously, the function of the kidneys and the physiological status of the lungs should be measured and every attempt made to rule out and improve secondary pathological entities, such as diabetes and anemia, so frequently present in old people.

This brief recital should emphasize the importance of the preoperative study. It is not the purpose of this paper to enter into a detailed discussion of special preoperative considerations, though I should like to point out that each separate disease suggests special tests and studies. Thus, patients with cardiac, pulmonary, renal, or liver disease require certain studies and the most suitable and careful selection of anesthesia. Patients with anemia, diabetes, malnutrition, dehydration, and obesity need correction of their abnormality before a surgical ordeal. I am anxious only to point out that before surgery each patient must be brought as near as possible to normal by proper remedial methods, and that the procedure and the anesthetic must be carefully considered so that no unnecessary risk is incurred.

Finally, in order to evaluate the factors producing any special complication, the surgeon must review each step in the preoperative preparation as well as each step in the operation. Drugs may play a rôle, and we feel there is ample evidence to justify the suggestion that the use of morphine is often dangerous. Morphine lowers both the rate and amplitude of respiratory excursions. If it is used in large doses and frequently repeated, it may, when added to other factors, be sufficient to encourage pulmonary atelectasis. I hope it will not let me appear cruel or unkind to state that a little postoperative suffering which increases the activity of the patient is far better medicine than inducing comfort through the use of powerful drugs.

I hope this discussion has introduced to you the conscientious attitude of modern medicine. Though the advent of anesthesia is only a little less than a century ago and modern asepsis scarcely fifty years behind us, we have benefited so greatly from increased knowledge in chemistry and physiology that anatomical and pathological considerations now must be judged in relation to these fundamental considerations. We appreciate the dangers of dehydration and improper food intake; we can recognize before operation and properly adjust chemical imbalances; and we have many anesthetics at our command to suit each situation.

The tendency of modern medicine is to learn by *our* mistakes, and thus to improve constantly the preoperative risk. End-result studies have provided our generation with a fund of knowledge that must be brought to every patient. Great haste in medicine has done much harm both to the doctor and to the patient, and this applies equally to the preoperative and to the operative phases of surgery. Haste has its place only when blood is spouting from the wound. This is of rare occurrence in civil medicine, and hopefully our times may, though the outlook is none too propitious now, avoid experience in this on the battle fields of Europe. Even in patients with intestinal obstruction, haste is dangerous. With modern suction apparatus (the Abbott-Miller double tube) the upper gut may be easily evacuated whilst the chemical imbalance is restored by proper intravenous therapy. Again in patients with peritonitis, time for adequate study before the ordeal will surely lower the postoperative difficulties. In the first place an accurate diagnosis will be made. But perhaps more important for the surgeon, he will appreciate where to place his incision. Let us examine acute appendicitis with abscess formation, one of the most frequent problems presented to the surgeon. He who makes a hasty diagnosis of appendicitis and, wedded to a single incision, enters the abdomen through a rectus muscle splitting incision will often find himself in a clean peritoneal cavity with an abscessed mass beneath the cecum and in the right lower quadrant. Under such circumstances eighty per cent of surgeons will break through into the abscess, spill bacteria into an up-to-now uninvaded peritoneal cavity, and, if the patient recovers after a stormy convalescence, accept the plaudits of the family for his great skill. How much better and how much more intelligent to have recognized exactly the condition by careful preoperative study and then to have made a flank incision which never would have entered the free peritoneal cavity. Thus he would have followed the pointing finger of Mother Nature who was preparing to discharge the trouble in the flank and his patient would have had an uneventful convalescence. The days of showmanship and simple manual dexterity are happily passed. We all rec-

ognize that it is the period of preoperative study and planning that has brought surgery to its useful and beneficent position today. I am hoping that those of you who are physicians will put your trust more and more in the surgeons of this generation who have had an adequate education in physiology and chemistry as well as anatomy and whose gentle and meticulous technique is aimed at avoiding all forms of injury whether it be chemical or mechanical.

Gentlemen, I come immediately from the bedside of a critically ill patient, suffering from suppurative appendicitis, diffusing peritonitis, complete adynamic ileus, a serious postoperative pneumonia, and jaundice of possible pyelophlebitic origin. He lives today, the eleventh postoperative day because of modern medicine and especially its *chemical* aspects. His fluid balance was easily achieved, but the electrolyte balance and the level of the serum proteins, dangerously threatened by ten days vomiting, are in fair shape only because of frequent blood chemical studies. The level of the sulfapyridine in his blood has been maintained by similar tests. His life thus far and his hope of life from now on are dependent on our chemical knowledge and clinical chemical tests. If such a spectacular case fixes my remarks in your memory, remember also that similar tests will prepare your patient for surgery, will give you positive information as to the risks he is to run and will prevent disasters. I beg of you to become chemically and physiologically minded.

RHODE ISLAND HOSPITAL

Clinical-Pathologic Conference

CASE PRESENTED BY DR. WILFRED PICKLES

This patient, male, aged 66, a plumber, was admitted April 11, 1935, complaining of constipation, borborygmus and colic. About five months before, he began to have flatulence, constipation and abdominal colic with small amounts of bright red blood in the stools which were pencil-like and light in color. The appetite was good but the patient had been afraid to eat fearing that this might aggravate his symptoms. He has lost fifteen pounds in weight during the past five months. There is no icterus.

There is no history of familial disease. The patient has been married twelve or fourteen years. The wife has diabetes. There are no children and no miscarriages. The past history was negative except for rheumatism thirty years ago.

Physical examination showed a well developed and nourished man lying in bed in no apparent distress. Teeth were absent. There was a soft systolic murmur at the cardiac apex, the blood pressure was 130/68. The abdomen was much distended and tympanitic, with dullness in the flanks, no visible peristalsis, borborygmus heard, pressure on the abdomen gives relief to the patient. Rectal examination caused pain and was therefore unsatisfactory, but a large, soft, smooth, tender mass was felt in the region of the prostate.

Further questioning brought out the fact that the patient at times had noticed a large mass appearing in the region of the cecum and travelling upward, then across and down to the left groin. This was accompanied by great pain, relieved as the mass disappeared.

Temperature, 98; pulse, 80; respiration, 20. The urine was negative, the Wasserman and Hinton negative. Urea, 13 mgm; sugar, 73 mgm. An X-ray of the lumbar spine and pelvis showed no evidence of matastatic malignant disease.

On April 13, a transverse colostomy was done. Following the operation, the pulse and temperature remained unchanged. The day following the temperature rose gradually to 103, the pulse to 120, the respiration to 40. There was moderate dyspnea and rales in the chest. The patient died on the second post-operative day.

DR. WILFRED PICKLES:

The operative findings are not recorded in the abstract but I think it fair to add them now.

Left rectus incision for Mixter colostomy made; small gut very distended; abdomen full of straw colored fluid; no definite mass felt at rectum, but areas of marked induration at rectosigmoid junction. Root of mesentery full of hard shotty masses. Many hard white areas in small gut: omentum full of hard shotty masses. Piece taken for biopsy. Liver was smooth: sigmoid could not be brought up as it was embedded in mass of hard tissue. Loop of transverse colon brought to upper end of wound, with Paul tube and rubber tissue under it. Wound closed in layers. Postoperative Diagnosis: Generalized carcinomatosis, from rectal cancer.

It seems evident that it was felt that this man had a carcinoma of the rectum or sigmoid and apparently his condition did not warrant further study and a colostomy was done.

On the day of operation the patient was apparently well but the next day the temperature rose to 103°.

Dr. Emery M. Porter:

I think the diagnosis is obvious from the operative findings, the glands, the omentum and the mass in the sigmoid. Before we were given that information I had noted some things to be ruled out. Carcinoma of the prostate, I think, is one thing to consider, but he comes in with no G. U. symptoms. Carcinoma of the rectum has to be considered, but it would have to be a very late stage to cause the obstruction which he had. The history of the mass on the right which comes up and goes across the abdomen rules out carcinoma of the stomach or anything higher up. No blood count is recorded but with normal temperature and pulse I think we can rule out a pyogenic thing. Actinomycosis has to be considered but it would not give him all the glands found at operation. Syphilis, I think, can be ruled out. Polyposis is possible from his history but you would expect more loss of weight and anemia. Same with T. B. and should have a temperature at examination. Polyp felt by rectum would not give that type of obstruction. Now an ulcerative colitis—but there again he would have diarrhea rather than obstruction. Diverticulitis would have to be considered but he has had no previous attacks. Lymphogranuloma inguinale certainly could give many of these signs and symptoms except it is usually low down and you can feel it. Adenomas and papillomas are rare. The possibility is in carcinoma of the rectum. I don't see anything else that could give that mass, and there are glands and something in the omentum—this certainly suggests a malignancy somewhere. A man of the right age and with increased constipation—I cannot say it is anything but a malignant growth of some sort. What the white plaques are in the small intestine I don't know.

Dr. Charles Gormly:

I would like to ask what the immediate cause of death was.

Dr. Pickles:

Pneumonia. There has been no proctoscopic examination — no rectal examination except an unsatisfactory one. The proctoscopic examination would be very valuable and rule out some of these things.

POSTMORTEM FINDINGS

Dr. B. Earl Clarke:

When the peritoneal cavity was opened it was found that the entire small intestine was markedly dilated. At the junction of the caecum and ileum, extending out 10 cm. on the ileum and growing around the caecum was a large tumor mass which completely encircled the ileum and greatly reduced its lumen so that there was definite obstruction. There were, in addition to this large mass, implants on the peritoneum and particularly in the pelvis between the bladder and rectum was a large spherical implant. That was what was felt by rectum. This compressed and obstructed the rectum. There were two obstructions: one at the rectum and one at the ileum. Apart from these peritoneal implants there were no glandular metastasis. When the gut was opened there was no cancer involvement anywhere in the mucosa—either in the rectum or in the ileum or caecum. This was all external to the gut and apparently did not originate in the mucosa of the intestine.

When the large mass was sectioned there was found in it a structure without any lumen but its size and shape indicated it was the appendix. The histology of the tumor was a little bit confusing but it did not appear to be very malignant. So we concluded that this is a carcinoid of the appendix with somewhat more than the usual degree of malignancy. This tumor is rather rare but it is the common tumor in the appendix. During the last ten years we have had fifteen at this hospital and at the Presbyterian Hospital in New York they reported nine in a ten year period. Ordinarily they are small—they remain within the wall of the appendix. They invade the wall but rarely metastasize. They are considered relatively benign and they very seldom cause death. "In this case, while there are no metastases, the tumor has grown to unusual size and has extended to involve the peritoneal surfaces.

Clinical Diagnosis:

Carcinoma of the sigmoid, colon or upper rectum.

Postmortem Diagnosis:

Carcinoid of the appendix with peritoneal implants and obstruction of rectum and ileum.



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PREMARITAL EXAMINATION

While the laws governing premarital examinations are readily interpreted as they apply to residents of the state of origin, residents of other states have had difficulty in securing marriage licenses because of misunderstandings of the law by themselves or their examining physicians. At the request of the Commissioner of the Department of Health of the State of New York, we publish the following provisions of the New York law:—

The New York law provides that an application for a marriage license shall be accompanied by the statement of a licensed physician or commissioned medical officer, that such applicant has been given such examination, including a standard serological test, made in an approved laboratory, as may be necessary for the discovery of syphilis, made on a day specified in the statement, which shall not be more than the thirtieth day prior to that on which the application is made. The procedure in New York City differs from that in the rest of the state. The Commissioner of Health offers the following comments relative to the interpretation of the law:

Laboratory tests made as a part of premarital examinations for persons applying for marriage licenses in New York state, outside of New York City, as well as the laboratories in which these tests are performed, must be approved by the New York State commissioner of health. For administrative reasons laboratories within New York State only have been approved for tests on applicants for licenses in the state exclusive of New York City.

The Commissioner of Health of the city of New York has approved certain out-of-state laboratories for the performance of serological tests on persons applying for marriage licenses in New York City. Requests for information concerning laboratories approved by the New York City Department of Health should be addressed to that department at Worth and Centre Streets, New York City.

Outline of procedures for examination of out-of-state applicants for marriage licenses in New York State exclusive of New York City.

1. Any physician duly licensed to practice medicine in the state in which he resides or in which he maintains his office may perform the necessary physical examination.

2. The specimen of blood must be sent to an approved laboratory in New York State. It is suggested that specimens be sent to the Division of Laboratories and Research, New York State Department of Health, New Scotland Avenue, Albany, N. Y., where examinations will be made free of charge.

3. The specimen should be labeled "for premarital examination."

4. The use of air mail is recommended when the specimen must be sent a great distance.

5. Upon completion of the test the laboratory will send the physician, in addition to the usual laboratory report, a certificate to the effect that the serological test was performed as a part of a premarital examination.

6. If, in the opinion of the examining physician the applicant is free from syphilis or does not have the disease in a stage which may become communicable, he should complete the certificate as indicated thereon.

7. The certificate is given to the applicant who will submit it to the clerk when the marriage license is applied for.

For further information relative to the marriage of persons in New York State, exclusive of New York City, communications should be addressed to the Division of Syphilis Control, New York State Department of Health, Albany, N. Y.

WHY FLAMMABLE

Manufacturers of anesthetic gases provide placards on "Operating Room Precautions." "No Smoking: No Open Flames. No Live Cautery. Flammable Anesthetics Being Used."

The word "flammable" is the antique, discarded form of the modern word "inflammable." To rejuvenate this obsolete word serves no purpose except to cloud the issue.

With the exception of some completely oxidized products, there are few materials which will not burn if subjected to a sufficient degree of heat. On the application of heat to combustible matter it unites with oxygen with production of more heat. Inflammable substances are such as are easily set on fire. Explosives unite with oxygen rapidly, with great expansion in volume, with force and a loud report. This classification is subject to modification. Kerosene, gasoline or alcohol, classified as inflammable, form with oxygen an explosive mixture which will propel an internal combustion engine. Some of the combustible materials, reduced to fine powder, become explosive. On the other hand, the reaction of explosives depends upon the proportion of available oxygen. Since the time of Priestley it has been known that explosions do not occur in a vacuum.

Of the anesthetic agents, while pure chloroform is not combustible, anesthetic chloroform, containing alcohol, burns with a smoky flame; conceivably it might become explosive. Ethyl chloride, igniting more readily, may be classified as inflammable. Ether and vinyl ether are inflammable. With a proper proportion of oxygen, their vapors form explosive mixtures. Acetylene burns in the hot oxy-acetylene flame but is handled with special precautions because of its explosive nature. While the ethylene in illuminating gas burns safely, pure ethylene mixed with oxygen is violently explosive. A mixture of cyclopropane and oxygen explodes with even greater violence.

In the operating room we are not specially interested in anesthetic gases and vapors as inflammable; common sense and ordinary precautions prevent operating room fires. Explosions are in a different category; they wreck the patient's lungs, the anesthetist's person, the anesthetic machine, the plate glass windows. Rather than demonstrations of inflammability we need further study of the nature, force and source of explosibility.

RHODE ISLAND MEDICAL SOCIETY

Minutes of the One Hundred and Twenty-eighth Annual Sessions

Scientific Session

The one hundred and twenty-eighth Annual Meeting of the Rhode Island Medical Society was called to order by the President, Dr. Edward S. Brackett, at the Medical Library, on Wednesday, June 7, 1939, at 2:15 P. M. The President recognized delegates from state societies; Dr. George R. Campbell of Augusta, Maine; Dr. Perry of New Bedford, Massachusetts; Dr. Garcin of Danielson, Connecticut.

Dr. Wilfred Pickles reported for the Trustees of the Fiske Fund that they had made no award for the year 1939 and announced the subject chosen for the year 1940: "Fracture of the Femur, Results of Treatment Compiled from Experience or Hospital Records." The Committee on Necrology made no report.

The first paper was read by Dr. Marshall Fulton, Associate in Medicine at Harvard Medical School and Physician to the Peter Bent Brigham Hospital, on the subject "Aneurism and Rupture of the Ventricle of the Heart." He showed that these conditions occur as a result of coronary occlusion and follow coronary thrombosis in ninety per cent. of the cases.

The second paper, on "Ovum and Spermatozoan Age at the Time of Fertilization and the Course of Gestation and Development in Lower Animals," was read by Dr. William C. Young, Associate Professor of Biology at Brown University.

The third paper was read by Dr. Edgar Allen, Professor of Anatomy at Yale University School of Medicine, on the subject, "Evidence from Experiments with Ovarian Harmones in Monkeys and Applications to Conditions in Women."

Dr. Arthur T. Hertig, Pathologist to the Boston Lying-In Hospital and Free Hospital for Women, Brookline, read the final paper on this program. His subject was "Pathological Aspects of Spontaneous Abortion." The program was well balanced and proceeded without discussion.

After a buffet supper, served in the dining hall, the Society reassembled at 8:00 o'clock for the evening session. Dr. Elliott C. Cutler, Professor of Surgery at Harvard Medical School, addressed the

Society on the subject, "Selection of Patients for Surgery." His address is printed in this number of the JOURNAL.

Dr. Soma Weiss, Professor of Medicine at Harvard Medical School, then gave an address on "Circulatory Collapse and Shock." The address was of great practical value. Dr. Weiss defined syncope, shock and collapse but indicated that there is no sharp distinction in the classification. Syncope occurs in healthy, robust subjects, coming on suddenly, with a feeling of dizziness, with pallor and sweating. The blood pressure falls, especially the systolic pressure, giving a low pulse pressure. The pulse becomes imperceptible and the subject unconscious. Recovery commences as soon as the subject is placed in the horizontal posture. Shock is the collapse of a cardio-vascular system already disturbed. The pulse rate rises; the blood pressure is lowered. A low blood pressure is not so valuable a sign unless the pulse is rapid. Collapse differs from shock in the time element and in reversibility. In both conditions there is a disproportion between the vascular capacity and the blood volume. Only twenty or thirty percent. of the blood volume is working, an amount incompatible with the working of the central nervous system. The bulk of the blood is either parked or lost and less blood is returned to the right heart. Either shock or collapse may be warm or cold, depending on whether the peripheral arterioles are open or closed. Factors to consider in the prediction of shock are fear, the state of nutrition, age, sex—females are resistant—the presence of infection. Rest in bed for forty days is not favorable in prevention of shock. Valuable agents in treatment of shock are posture, strychnine, coramine and caffeine. Epinephrin and ephedrin are ineffectual.

On Thursday, June 8, the meeting was called to order at 2:00 P. M. Dr. Perrin H. Long, Associate Professor of Medicine at Johns Hopkins Medical School, read the first paper, with the subject, "The Clinical Use of Sulfapyridine in the Treatment of Pneumococcal Infections." Sulfapyridine does prevent proliferation of pneumococci. The patient must form his own antibodies. Dr. Long predicted a large decrease in the mortality rate from pneumonia in the next season. Objections to sulfapyridine are increase in nausea and vomiting, and formation of renal stones. Dr. Long's paper was discussed by Drs. Emery M. Porter and William S. Streker.

The second paper, on "Primary Carcinoma of the Lung," was read by Dr. Edward Delos Churchill, Professor of Surgery at Harvard Medical School, His exhaustive presentation of the subject was illustrated with lantern slides and motion pictures.

The third paper, on the subject, "Treatment of Carcinoma of the Cervix: Report on 135 Additional Cases, with Five Year Results," by Drs. Herman C. Pitts and George W. Waterman, was read by Dr. Waterman. It was a supplement to their paper of two years ago.

The fourth number on the program was a symposium on "Anesthesia for the Benefit of the Patient," by Drs. Albert H. Miller, Meyer Saklad, and John A. Hayward. Dr. Miller discussed Premedication; Dr. Saklad, Agents; and Dr. Hayward, Methods.

Dr. Brackett then delivered the Presidential Address, which has been printed in the July number of the JOURNAL, and finally inducted into office the officers for the ensuing year: Dr. Charles H. Holt, President; Dr. Lucius C. Kingman, First Vice-President; Dr. Frederic V. Hussey, Second Vice-President; Dr. Guy W. Wells, Secretary; Dr. Jesse E. Mowry, Treasurer.

The annual dinner was served at the Pomham Club at 7:00 P. M. Dr. Murray S. Danforth was Anniversary Chairman and Dr. Reginald Fitz, Professor of Medicine at Boston University, the speaker for this occasion.

Throughout the sessions the following Commercial Exhibits were displayed at the Medical Library:

Blanding & Blanding, Inc., Providence
The Borden Company, New York
Boss & Seiffert Company, Inc., Providence
George L. Claflin Company, Providence
Otis Clapp & Son, Inc., Providence
The Coca-Cola Company, Atlanta, Georgia
Davies, Rose & Company, Ltd., Boston
Lederle Laboratories, Inc., New York
Mead Johnson & Company, Evansville, Indiana
Philip Morris & Co., Ltd., Inc., New York
Smith, Kline & French Laboratories, Philadelphia

While the membership of the Society was mostly silent at the scientific sessions, local presentations at the morning clinics were notable for their interest and value. Wednesday morning, at the Charles V. Chapin Hospital, Drs. Hugh E. Kiene, Himon Miller, and Robert J. Streitwieser presented

"Metrazol Therapy at the Charles V. Chapin Hospital," a resume of which will be published in an early issue of the JOURNAL. Drs. Alex M. Burgess, Nat H. Gifford, John C. Ham, and J. Murray Beardsley presented "Modern Treatment of Tuberculosis with Special Reference to Collapse Therapy." Drs. Dennett L. Richardson, K. K. Gregory, and Edward J. West gave a clinic on "Acute Infectious Diseases."

At St. Joseph's Hospital the following topics were presented: Drs. William H. Jordan, Francis V. Corrigan, and Frank Jacobson. "Whooping Cough and Diphtheria Immunization," "Thymus Gland Enlargements and Consequences." Drs. Edward Burke, John Gormly and Agostino Sammartino, "Proper Standards of Prenatal Care. Discussion of Cases." Dr. Vincent J. Ryan, "Treatment of Common Skin Diseases." Drs. Vincent J. Oddo, John Streker, and Arthur E. Hardy, "Use of Sulfanilamide in G. U. Infections." Drs. William A. Horan, Thomas Murphy, and Walter Molony, "Results Obtained by Blind Nailing of Fractures of Neck of Femur." Dr. James A. Hamilton, "Value of Cardiographic Readings to the General Practitioner." Drs. William S. Streker, John T. Monahan, and Patrick I. O'Rourke, "Experiences with Sulfapyridine in the Treatment of Pneumonia." Dr. John C. Corrigan, "Case Presentation—Carotid Sinus Phenomenon in Diabetic Patient." Dr. Joseph L. Dowling, "The Care of Industrial Eye Injuries." Operative Clinics were held by the various surgical departments.

Thursday morning at the Miriam Hospital, operative clinics were given by Dr. Frank E. McEvoy and Staff of the Surgical Service and by Dr. H. Winkler of the Nose and Throat Service. Dry clinics were given by Dr. L. I. Kramer and Staff of the Medical Department, Drs. B. Sharp and H. Grossman of the Eye Service, Dr. B. Feinberg of the Pediatric Service. Dr. Ira Noyes and the Obstetrical Staff presented "The X-ray in Obstetrical Diagnosis." Dr. S. Kennison and Staff gave laboratory demonstrations.

Thursday morning the Rhode Island Hospital presented demonstrations in the Peters House, the Aldrich House, and in the main operating rooms. Subjects treated of at the Peters House were as follows: Dr. Eric Stone, "Treatment of G. C. with Sulfanilamide." Dr. H. K. Turner, "Renal Stone." Dr. H. E. Harris, "The Use of Nails in Fractures of the Neck of the Femur." Dr. Henry McCusker, "The Use of Pins in Fractures of the Neck of the Femur." Dr. J. Murphy, "Hydatidiform Mole." Dr. B. H. Buxton, "Methods of Sterilization." Dr. J. A. McCann, "Treatment of Pelvic Hemorrhage." Dr. Joseph Franklin, "Report of a Case of Death Following Blood Transfusion." Dr. William Mahoney, "Thyroid Surgery." Dr. Charles Ashworth, "Appendicitis." Dr. Frank Littlefield, "Plastic Surgery." Dr. Robert Baldridge, "Surgery for Hyperthyroidism." Dr. Edward Cameron, "The Use of Radium in Our Clinic." Dr. Charles J. Smith, "A Dentist's Observations in the Tumor Clinic."

The following subjects were presented in the Aldrich House: Dr. Frank T. Fulton, "Are There Recognizable Warnings of Impending Coronary Thrombosis?" Dr. Cecil Dustin, "The Mechanism of Heart Pain." Drs. Buffum, Bates and Freedman, "Demonstration of Technique of Allergy Testing." Dr. Harold Calder, "Serum and Sulfapyridine in Treatment of Pneumonia." Dr. Charles Gormly, "Bronchiectasis." Dr. E. Windsberg, "Rare Operative Case." Dr. L. S. Happ, "Bronchoscopic Carcinoma." Dr. Morgan Cutts, "Sulfapyridine in Treatment of Pneumonia." Dr. Paul Cook, "Luetic Aneurism with Intercurrent Heart Block." "Cheyne-Stokes Respiration." "Multiple Lobar Pneumonia." "Myelogenous Leukemia." Dr. Herman A. Lawson, "Multiple Bone Changes with Atypical Blood Picture." Dr. W. N. Hughes, "Multiple Sclerosis." "Differential Diagnosis Between Meniere's Disease and Acoustic Neuroma."

Respectfully submitted,

ALBERT H. MILLER, M.D., *Secretary pro-tem.*

Report of the Entertainment Committee

After considering numerous possible places for holding the Annual Dinner, your committee feels that from the standpoint of accessibility, pleasant surroundings, and excellence of the food which is served, the Pomham Club is a desirable place for holding the Dinner.

The serving of a Supper on Wednesday evening, June 7th at the Medical Library Building, has been arranged with the usual Caterer.

Respectfully submitted,

FRANK W. DIMMITT, M.D.,
Chairman.

PROVIDENCE MEDICAL ASSOCIATION

Minutes of the June Meeting

A regular meeting of the Providence Medical Association was held at the Medical Library on Monday, June 5, 1939. In the absence of Dr. Messinger, the meeting was called to order by Dr. John G. Walsh, Vice-President of the Association, at 8:35 P. M. The minutes of the preceding meeting were read by the Secretary and upon motion of Dr. A. M. Burgess were accepted as read.

The Secretary reported for the Standing Committee as follows:

1. That the Executive Secretary had been authorized to serve as an official representative of the Association on the Council of Social Agencies of Providence.

2. That a motion had been passed that a resolution relative to the Wagner National Health Act be prepared and submitted to the Association with recommendation of adoption, and that if adopted copies be sent to the members of Congress from Rhode Island.

3. That a motion had been passed requesting the President to appoint a Committee on Credit and Collection for the purpose of studying that question for the Association.

4. That a recommendation had been passed that the officers of the Providence Medical Association voluntarily associate with the officers of the State Medical Society in an effort to work out a suitable plan relative to increasing the membership of the State Medical Society.

5. That a motion had been passed that the proposed amendments to the Constitution and By-Laws of the Association be adopted and that, if adopted, a copy of the revised Constitution and By-Laws be sent to each member of the Association during the summer.

6. That a motion had been passed authorizing the Executive Secretary to send during the summer to each member of the Association, a copy of the revised Constitution and By-Laws, if adopted, copies of any special committee reports not printed in the Rhode Island Medical Journal, and whatever other forms may be necessary for the better operation of the Association and the executive office.

7. That a motion had been passed that the final report of the Committee for the Study of the Need and Supply of Medical Care in the district, as prepared for the American Medical Association, be mimeographed and distributed to all the agencies aiding in the survey, and also sent to the members of Congress from Rhode Island. The report of the Standing Committee was accepted as presented.

Dr. Walsh reported that the obituary of Dr. Clifford B. Colwell, prepared by Dr. Alvah H. Barnes and Dr. Edward F. Burke, was on file with the Secretary.

Dr. Alex M. Burgess, Chairman, reported for the Committee on the Study of Voluntary Health Insurance and submitted as part of his report a tentative plan for such insurance under the auspices of this Association. Dr. Eric Stone moved that the report be accepted as read and that a copy of the proposed plan, together with the report, be sent to each member of the Association that all may be thoroughly familiar with the plan for discussion at a future regular meeting. The motion was seconded by Dr. Robert G. Murphy and was passed unanimously.

Dr. Walter S. Jones presented the report of the Committee on the Study of Telephone Service, which was accepted as read.

Dr. Philip Batchelder made a further report of progress for the Committee on Tuberculosis, which included recommendations for further action by the Association. Dr. E. M. Porter moved the acceptance of the report and its recommendations. The motion was seconded and passed.

Dr. Robert G. Murphy read the report of the Committee for the Study of Group Health and Accident Insurance. The report was accepted as presented.

The Secretary reported for the Committee on Revision of the Constitution and By-Laws, and outlined the proposed revisions. By a unanimous vote the amendments and revisions to the Constitution and the By-Laws were adopted.

The Secretary reported that the Standing Committee recommended the election to membership in the Association of Irving A. Beck, M.D., and James P. Deery, M.D. The motion of Dr. William Muncy that these applicants be elected to membership was seconded, and by a unanimous vote the men were declared elected.

Dr. Walsh announced that the annual golf tournament and dinner of the Association would be held at the Wannamoisett Country Club on Wednesday, June 21.

Dr. Walsh announced that the President had made the following committee appointments: Committee on Credit and Collection: Dr. J. Edwards Kerney, Chairman, Dr. Benedict Chapas, Dr. G. Raymond Fox, Dr. Angelo Scorpio, Dr. John S. Dziob. Advisory Committee to the Rhode Island State Home and School: Dr. Harold G. Calder and Dr. Charles Bradley.

Dr. William P. Buffum spoke briefly on the plans for the active participation of the membership in the Community Fund Drive in the fall, and called for full cooperation from every physician and also from the dentists.

Dr. Charles F. Gormly presented the following resolution relative to the Wagner National Health Act:

Whereas, the Wagner National Health Act presented to Congress has been studied and opposed by the House of Delegates of the American Medical Association because

It does not safeguard in any way the continued existence of the private practitioners,

It fails to provide for the use of the thousands of vacant beds now available in hundreds of general hospitals,

It proposes to make Federal aid for medical care the rule rather than the exception,

It does not recognize the need for suitable food, sanitary housing, and the improvement of other environmental conditions necessary to the continuous prevention of disease,

It proposes complete medical service in addition to compensation for loss of wages during illness,

It gives authority to Federal agents to disapprove plans proposed by the States, and

Whereas, Federal subsidies have invariably involved Federal control,

Therefore, the Providence Medical Association opposes this proposed legislation as inimical to the best interests of the health of the people of this country and to the medical profession, which is entrusted with the protection of that health, and

This Association recommends that any state in actual need, for prevention of disease, for promotion of health, or for care of the sick should be able to obtain aid in a medical emergency without stimulating every other state to seek and to accept similar aid, thus to have imposed upon it the burden of Federal control.

The resolution was endorsed by a voice vote of the membership.

The President introduced as the speaker of the evening, Dr. Raymond L. Webster of the Orthodontic Staff of the Samuels Dental Clinic of Rhode Island Hospital and Vice-President of the Rhode Island Dental Society. Dr. Webster responded with a discussion of "Dental Problems of Interest to the Medical Man." Discussion was offered by Drs. Henry Utter, William Muncy, and Harold Williams of the Providence Medical Association, and by Dr. Charles Smith and Dr. Edward C. Morin for the State Dental Society.

The meeting was adjourned at 10:30 P. M. Attendance, 105. Collation was served.

Respectfully submitted,

HERMAN A. LAWSON, M.D., *Secretary*

LOCAL EVENTS

The Annual Outing of the Staff of St. Joseph's Hospital was held at the Metacomet Golf Club on Wednesday, June 14. Frank Wardell, Explorer and Traveller, gave an account of life in Africa and the Far East, illustrated with motion picture films.

The Providence Medical Association held its Annual Golf Tournament at the Wannamoisett Country Club on Wednesday, June 21.

The Rhode Island Medico-Legal Society held its Annual Meeting and Election of Officers at Tophill Restaurant on Thursday, June 29.

Dr. Roland Hammond was the recipient of an Honorary Master of Arts degree conferred by Tufts College on June 19.

Dr. H. Frederick Stephens is associated with Dr. George W. VanBenschoten in the Practice of Ophthalmology.

Dr. Kenneth G. Burton is limiting his practice to Fractures and Orthopedic Surgery.

RHODE ISLAND HOSPITAL

On July 1, August Henry Clagett, Jr., M.D., of Philadelphia, became Resident Cardiologist. Premedical education was obtained from the University of Pennsylvania and his M.D. from Hahnemann Medical College. He was in General Practice in Milton, Delaware, for one year, and did postgraduate work in Internal Medicine for one year at the Graduate School of Medicine, University of Pennsylvania. Dr. Clagett is married.

On July 1, Dr. John R. Ross, of Bellevue, Ohio, began a year's internship in Pathology. Dr. Ross is a graduate of Ohio State University and Medical School. During his medical school years he had an internship for two summers at St. Elizabeth's Hospital in Youngstown, Ohio. Dr. Ross obtained an M.A. degree in Pathology from the University of Ohio.

On July 1, Dr. Harry Campbell took up residency at the Pondville Hospital, in Wrentham, Mass. Dr. Campbell recently visited at the Rhode Island Hospital.

Dr. Carl S. Sawyer, a graduate of Brown University and McGill Medical School, on July 15, started a two year's internship. Dr. Sawyer is a son of Dr. Carl D. Sawyer.

Dr. Henry Miller, recent cardiologist, is now taking a service at Pratt's Diagnostic Hospital, Boston.

Dr. Charles Bryan's internship terminated June 30. He is now taking a year in Pathology at the New England Deaconess Hospital in Boston.

Dr. Herman I. Riddell, of Los Angeles, California, a graduate of the University of California in Los Angeles, 1933, and the University of Southern California, where he obtained his M.D. degree in 1936, started a year's internship in Pathology on June 29. From 1936 to 1939, Dr. Riddell did Surgery at the Louisville City Hospital, Louisville, Kentucky. Dr. Riddell is married.

Dr. Howard M. Trafton, of Brookline, Massachusetts, a graduate of Bates College and Boston University Medical School, on July 1st, began a two year's internship.

On July 15, Dr. Morris Goldenberg, of Los Angeles, California, became Anaesthesia Resident. Dr. Goldenberg took his pre-medical course at M. I. T. in Boston and obtained his M.D. from Tufts Medical School in 1936. He interned at the Cedars of Lebanon Hospital in Los Angeles, a one year's rotating service. He also had a substitute residency in Obstetrics and Gynecology at the Boston City Hospital. Dr. Goldenberg is married.

On July 1, Dr. Scott L. Tarplee became Resident Physician at the Jane Brown Memorial Hospital. Dr. Tarplee's home is in Atlanta, Georgia. He graduated from Emery College and Medical School. He interned for one year at the Grady Hospital in Atlanta and one year at the Massachusetts Memorial Hospital in Medicine on the service of Dr. Fitz.

Dr. Leo Francis Geoghegan, of Providence, Providence College and Tufts' Dental School, began a fifteen months Dental Internship, on July 1.

On July 24, to Dr. and Mrs. Reginald C. Farrow, a son, John Tyler Farrow. Dr. Farrow resides at 106 Clarendon Street, Syracuse, N. Y.

On July 30, at the Lying-In Hospital in Providence, to Dr. F. Woodward Lewis and Dr. Elizabeth Lewis, a son, F. Woodward Lewis, Jr. Dr. F. Woodward Lewis began an Internship at the Lying-In Hospital on August 1.

Dr. Reeves Betts is at present a patient at the Palmer Hospital, Boston, Massachusetts, having been operated on for appendicitis.

Dr. Richard Bruning of Maplewood, New Jersey and Dr. Robert Richards of Pondville Hospital, Wrentham, Massachusetts, visited the Rhode Island Hospital recently.

RECENT BOOKS

Practice of Allergy. By Warren T. Vaughan, M.D., pp. 1082, illustrations, 338, Cloth, $11.50, The C. V. Mosby Company, 3525 Pine Boulevard, St. Louis, 1939.

Dr. Vaughan has written a very complete text book covering the present knowledge in the field of clinical allergy. The theoretical part, dealing with the physiology and immunology of the allergic response is short. He describes with great detail his technic in diagnosis and treatment. He also discusses at length with many illustrative cases inhalant, food, and contact allergy; and interesting observations are made about possible allergic influences in diseases not usually classified as allergic in nature.

Altogether this is a fine work, detailed enough to be useful for reference, and probably the best text book at present available.

William P. Buffum, M.D.

Medicolegal Phases of Occupational Diseases, by C. O. Sappington, M.D., Dr.P.H. pp., 400, $2.75. Industrial Health Book Company, Chicago, 1939.

Every physician in general practice today is coming more and more into contact with occupational diseases, because of the emphasis being placed on such diseases through legislation. It is becoming necessary that the general practitioner have knowledge of at least the fundamental principles of industrial medicine, industrial hygiene, and occupational diseases, so that he may properly evaluate the etiologic factors of actual or alleged occupational diseases which may come to his attention. He will find this volume of inestimable value in this respect.



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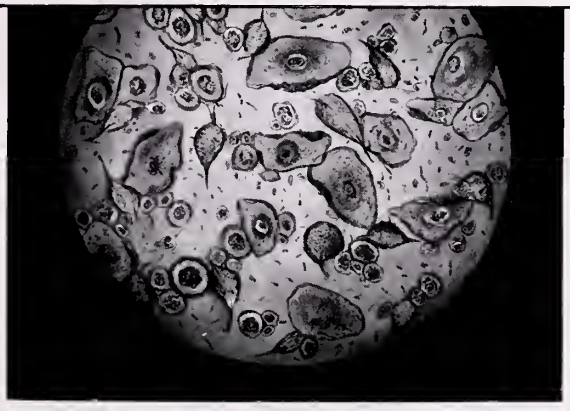
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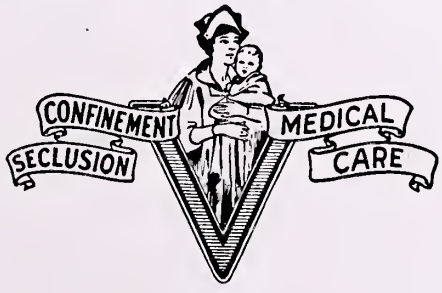
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Old News

HEAVEN FOR AN M. D. FROM ENGLAND

This week the doctors of Huddersfield held their annual dinner, and during the speech-making were much amused by a poem read by Dr. H. Tomlin.

It is entitled "The Doctor's Heaven," and is as follows:

Last evening I was talking
With a doctor aged and grey,
When he told me of a dream he'd had,
I think 'twas Christmas day,
While dozing in his office,
This vision came to view,
He saw an angel enter,
Dressed in garments white and new.
Said the angel "I'm from heaven,
To earth I've just come down,
To call you up to glory,
And put on your glorious crown.
You've been a friend to everyone,
And worked hard night and day,
You have succoured many thousands,
And from few received your pay,
So we want you up in glory,
For you have laboured hard
And the angels are preparing
Your eternal just reward."

Then the angel and the doctor,
Started up towards glory's gate,
But, when passing close to Hades,
The angel murmured "Wait,
I've a place I wish to show you,
'Tis the hottest place in hell,
Where those who never paid their bills,
In torment ever dwell."
And behold the doctor saw there,
His patients by the score,
And grabbing up a chair and fan,
He wished for nothing more,
He desired to sit and watch them,
As they sizzled, singed, and burned,
And his eyes would rest on debtors,
Whichever way they turned.
Said the angel, "Come on, doctor,
There are pearly gates to see,"
But the doctor only murmured,
"This is heaven enough for me!"

Contributed by E. G. T., M.D.

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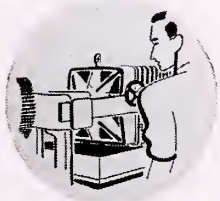
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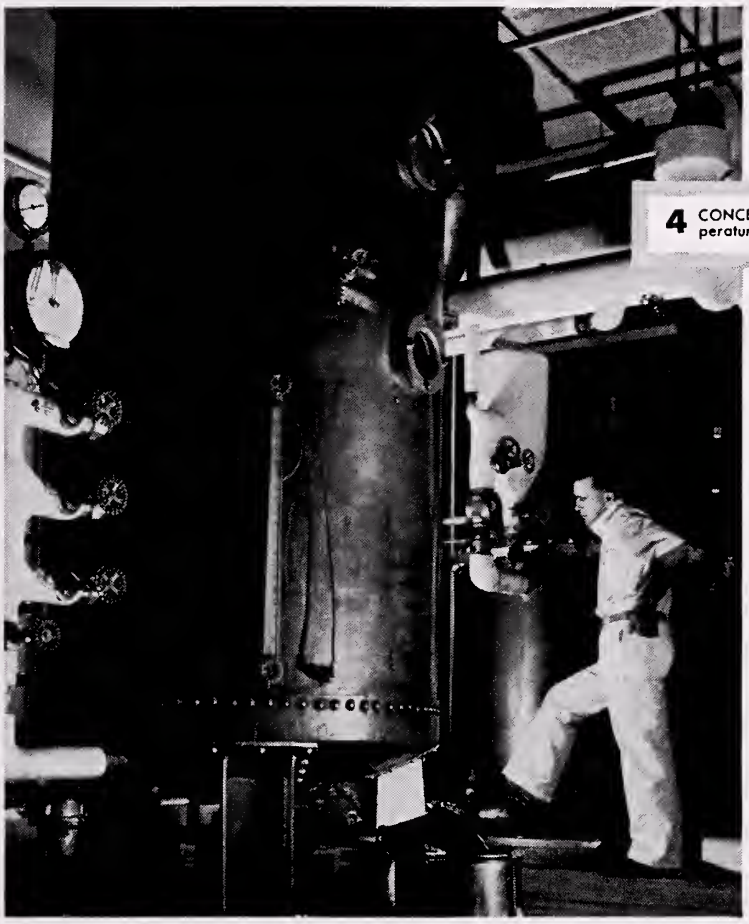
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METHODS FOR QUANTITATIVE ESTIMATION OF THE VITAMINS

1. The Determination of Vitamin D Activity

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Recognition of the existence of the antirachitic vitamin naturally stimulated investigation of methods whereby this dietary essential could be quantitatively estimated. Steady advances in knowledge of the causes and effects of rickets brought gradual improvements in these methods. Consequently, there are now available several techniques for the quantitative determination of vitamin D in foods or other biological materials.

The first and probably most widely employed method for estimation of vitamin D is by means of the so-called "line test" (2). In this technique as now employed (3), young rats are confined for 18 to 25 days to a diet conducive to development of rickets. These periods of time, with proper handling and confinement of the animals, are sufficient to induce a definitely rachitic condition. The rachitic rats are then properly grouped with respect to negative control groups to receive no supplements to the rachitic ration; positive control or reference groups to receive graded doses of some standard reference material; and "assay groups" to be given graded doses of the material under test. For the next 8 days the animals are fed daily doses of the proper supplement, either assay or reference material. No supplements are fed on the ninth and tenth days.

On the eleventh day the animals are sacrificed and either the proximal end of the tibia or the distal end of the radius or ulna dissected out, sectioned, cleaned and finally immersed in silver nitrate solution. By double decomposition reaction, silver salts deposit where calcium is present in the metaphysis of the bone. When exposed to light these silver salts are reduced and form a dark line indicating the extent of calcium deposition. The experienced technician can estimate the degree of healing from rickets by the continuity and area of the line. By comparison of the results obtained on the various groups of animals, a quantitative expression of the antirachitic activity of the material under assay may be obtained.

A second method for evaluating vitamin D activity is that involving determination of "bone ash" (4). In this technique, final estimation of the degree of bone calcification—and thus the antirachitic potency of the substance under assay—is made by chemical analysis of specific bones of the experimental animals. A third assay method (5) is that involving roentgenological examination of certain bones. Comparisons of the bone densities of the various experimental animals serve as a basis for estimating the degree of healing from—or prevention of—rickets and hence permit determination of the vitamin D activity of the material under test.

Common foods as they naturally occur can hardly be considered as food sources of vitamin D. However, as exceptions, certain foods of marine origin (6) might be mentioned which consistently contribute small but definite amounts of the antirachitic factor to the diet. In addition, development of various means of fortifying foods with vitamin D—particularly those foods of importance in infant and child feeding—has made available other food sources of the vitamin (7). Among the many varieties of commercially canned foods will be found products of both types, which, when properly used or supplemented, should prove of value in obtaining an adequate intake of vitamin D, particularly by infants and children.

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(1) 1938. J. Am. Med. Assoc. 110, 2150.
(2) 1922. J. Biol. Chem. 51, 41.
(3) 1936. The Pharmacopeia of the United States of America, Eleventh Decennial Revision, 482.
(4) 1923. J. Biol. Chem. 58, 71.
1924. Ibid. 61, 405.
(5) 1928. Biochem. J. 22, 135.
(6) 1938. J. Am. Med. Assoc. 111, 528.
(7) 1937. J. Am. Med. Assoc. 108, 206.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the fifty-second in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



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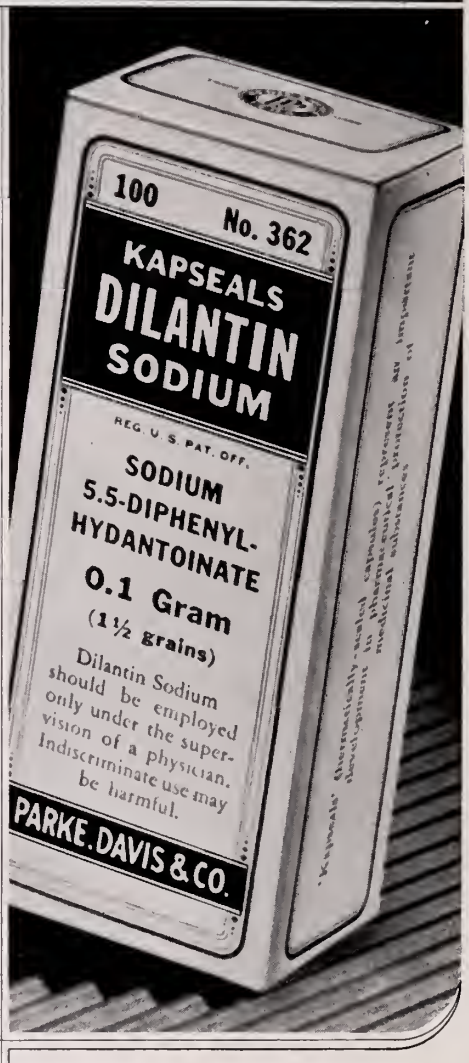
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THE RHODE ISLAND MEDICAL JOURNAL

VOLUME XXII OCTOBER, 1939 NUMBER 10

METRAZOL THERAPY AT THE CHARLES V. CHAPIN HOSPITAL

HUGH E. KIENE, M.D., HIMON MILLER, M.D., AND ROBERT J. STREITWIESER, M.D.

CHARLES V. CHAPIN HOSPITAL, PROVIDENCE

The first work using Metrazol (Cardiazol) in the treatment of mental disease was reported in Budapest by L. Meduna in July, 1935. Since this beginning, the drug has been used universally in the treatment of schizophrenia, involutional melancholia, and also in other mental disorders. Many of the earlier reports gave enthusiastic percentages in the remission of schizophrenia, some as high as 80%. Today, the validity of such a high remission is questioned because of the inability of contemporary workers to match or even to approach this mark. The more careful selection of cases, in differentiating between schizophrenia and the psychoneuroses, has probably, as one factor, aided in reducing the earlier high remission percentage. Prior to 1935, it had been used as a cardiac and respiratory stimulant.

In the treatment of schizophrenia and involutional melancholia, Metrazol is administered rapidly intravenously in doses ranging from 3 to 10 cc. The result of the injection, if satisfactory, is an immediate generalized convulsion which lasts about sixty seconds and is associated with extreme cyanosis. Adrenalin hydrochloride (1-1000), if given intravenously in doses of 0.5-1.0 cc., just prior to the Metrazol solution, has been beneficial in reducing the average dose of Metrazol per treatment from about 8 cc. to about 4 cc. Also, it has been found that very little cyanosis is present in the immediate post-convulsive state and that less apnea is existent.[1] Similar findings have been noted here and it appears that adrenalin has a definite enhancing effect on the smaller amount of Metrazol used in the individual treatment and that fewer "missed convulsions" are noted if adrenalin is used in this manner. Because of the severity of the muscular contractions, fractures and dislocations may occur during the convulsion. It is the belief of the Psychiatric Staff of the Charles V. Chapin Hospital that if there is going to be an improvement, it will be seen after the fourth or fifth injection.

In this report, the drug has been used in fifty-nine patients. The results of the treatment are difficult to evaluate. In the majority of the papers published, an attempt is made to say whether or not there is recovery, improvement, slight improvement, or no improvement. Such a classification is not given in this report. The index used is whether or not the patient is in an institution. This is a gross determination of the result and does not consider that some families will keep an extremely ill person at home where others would have him placed in an institution. We must bear in mind also that some of the chronic types of schizophrenia can get along in the tolerant home.

The present series is composed of fifty-nine cases. The diagnostic classification is as follows:

Schizophrenia (without reference to type)	53
Neurosis	1
Involutional melancholia	2
Behavior problems	3

Of these, at the present writing, thirty-seven (62.8%) are at home and twenty-two (37.2%) are in institutions.

In the summary, (Page 162) we have attempted to demonstrate the result of Metrazol therapy as reflected in the disposition of each case. There has been no attempt at correlating age and the number of convulsive episodes with the ultimate disposition.

Summaries of Two Representative Cases

Case No. 1: White male, age 23 years, admitted to the Psychopathic Ward on April 26, 1938 and discharged July 16, 1938.

Diagnosis: Schizophrenia

Duration of stay in Hospital: 81 days

Number of Metrazol convulsions: 11

Condition on discharge: Improved

Patient was in the Westerly Hospital in September of 1937, following an automobile accident. At that time he was found unconscious lying beside his overturned car. He suffered lacerated wounds of the scalp and neck and laceration of his right

Presented to the Medical Staff, Miriam Hospital, Providence, December 15, 1938, and to the one hundred and twenty-eighth Annual Meeting of the Rhode Island Medical Society, at the Charles V. Chapin Hospital, Providence, June 7, 1939.

The following is a tabulated summary of the cases under consideration.

Patient (sex)	Age	Convls.	Condition	Disposition
Female	20	4	Slightly improved	State Hospital
Female	34	9	Improved	Home
Female	23	5	Improved	Readmission
Female	30	20	Unimproved	State Hospital
Female	19	6		Run away (home?)
Female	22	14		Home—Readmission
Female	30	10		Home—Teaching
Female	25	6		Home—Attends Clinic
Male	47	5		Readmission—Pernicious anemia
Female	21	6	Unimproved	Taunton State Hospital
Female	54	16	Improved slightly	Home
Female	27	7	Unimproved	State Hospital
Male	38	11		Home—Readmission
	(second series)	9		
Female	33	4		Home—Readmission
	(second series)	14		
Female	21	8	Unimproved	Home—Against advice
Male	21	5		AWOL—Hallucinations Drinking
Female	26	7	Unimproved	State Hospital
Female	18	5		State Hospital, Paroled 3/12 Against advice
Female	20	9	Improved	Home—Sociable
Male	23	11	Improved	Home—Working
Male	21	10		C. C. C. Camp
Female	22	8	Unimproved	Readmission
	(second series)	5		State Hospital
Female	36	11	Unimproved	Home
Female	33	10	Improved	Home
Male	20	6	Unimproved	State Hospital
Female	33	7		Readmission—CVCH
Female	33	10		State Hospital, Cyclic behavior
Male	48	8		State Hospital—Superior, Seclusive
Female	23	12		State Hospital—Chronic, disturbed ward
Male	28	6		AWOL—Hallucinations, Childish, Apathetic
Female	17	12	Unimproved	Home—Question of State Hospital
Female	26	11		Home—Against advice Readmission—State Hospital
Female	40	7	Improved	Home
Female	37	6		Home—Good
Male	15	6		Readmission
	(second series)	10	Improved	Home
Male	38	8		Mass. State Hospital
Female	27	10	Improved	Home
Female	22	12		Home—Working
Female	35	11	Unimproved	State Hospital—Chronic
Male	40	10	Unimproved	State Hospital
Female	30	5		Home—3 readmissions
Female	33	10	Unimproved	State Hospital
Female	23	17		Home—Against advice
Male	19	7	Improved	Home
Female	34	10		Home—Seclusive, Doing housework
Male	24	13	Unimproved	Home
Male	33	11		Home
Male	29	8		State Hospital—Hallucinations—Insulin (4)—Cooperative
Male	46	8	Unimproved	State Hospital
Male	12	7		Very well—At foster home
Male	29	10	? Improved	Home
Male	33	8	Unimproved	State Hospital
Female	36	6	Improved	Home
Male	14	8		Readmission AWOL
Female	21	5		State Hospital
Female	32	15		Home—Readmission
Female	18	10		Home
Female	34	13	Unimproved	Home
Female	21	12		Home—Exeter, Parole 4/23/39

shoulder. X-rays were negative for fracture of the skull. He remained in the hospital six days and was discharged as recovered. The symptoms of the illness leading to his hospitalization here began about April 24, 1938. Patient said the house was haunted and had an iron bar to protect himself. He appeared restless and irritable. For four months following this accident he exhibited symptoms of seclusiveness, insomnia and anorexia. Just prior to entry here, he made an unpredictable call to a young lady's home ninety miles away and his aberrant behavior while there, necessitated his being returned to his home. He became paranoid, admitted hallucinations of ghosts, and was hyperactive in speech, relating his ideas of Communism and politics. He was seen by a physician and hospitalization was advised.

On admission, he was noisy and resistive with tendencies to aggressive assaults on attendants, even striking one, during routine care. Physical examination was done with the patient under the influence of a sedative. Examination was essentially negative. Patient was in robust physical health.

Blood Wassermann negative; Hinton negative. Blood Sugar: 95, N.P.N. 34. Spinal fluid Wassermann negative, Pandy 0, Protein 30.

Patient's behavior on the ward was characterized by extreme excitement, assaultiveness, profanity, hallucinosis and ideas of delusionary character. At times he would become quiet, intensely preoccupied and seclusive. His toilet had to be supervised and sedation for sleep was frequently given.

His mental trend is exemplified by the following excerpt: "I'm pretty happy, slap-happy." What do you mean? "You know what I mean. I did enough insulting around here the other day when I was trying to convince you birds that I wasn't crazy. I can't help it if I see in two dimensions. Now, you see that bottle over there. Well it's round, it's oblong, wider at top than at bottom. But you see an oblong here. It isn't round, but you know it's round. What you see is an oblong with a greater length and width at the top than at the bottom. Don't that explain it? I'd like to go free now." Do you hear voices? "Yes, and people talk about me. They stop and say 'J—— C——, not that, not that.' They say I married a mulatto girl."

With routine symptomatic and sedative therapy the patient failed to improve. On May 17 Metrazol therapy was instituted. Following his first convulsive episode the patient complained of severe headache and backache. This persisted for about four hours after which he was relieved.

After four successful Metrazol treatments the patient stated that he felt better. He appeared more alert, became more cooperative, tidy and exhibited more ward sociability. His appetite improved and his sleep was undisturbed.

Progressive improvement was noted and no evidence of hallucinations or any delusions could be brought out. He visited at home and his parents stated that he was as well as he ever had been. In all, eleven adequate Metrazol treatments were given. The maximum dose was seven cc. At the time of discharge the patient was well oriented, neat, tidy and rational. His mental trend and content were normal.

Duration of illness: One year.

Follow-Up: 12/8/38 (From parents—patient not at home)

Work: When discharged patient worked irregularly at different barber shops, mostly only weekends. Since the end of November he has worked steadily at a barber shop earning eight dollars a week. He would like to get a better job.

Sociability: Is adequate, engaging in dancing and in various stag parties. It is worthy to note that the patient does not see the young lady any more, at whose home he became acutely ill.

Physical Status: It is not felt that he has lost any weight. Has had no illnesses since discharge. Sleeps well and his appetite is good.

General Attitude and Appearance: Neat and tidy, pleasant and no more nervous than is normal for him.

Case No. 2: White male, school teacher, age 61 years, admitted to the Psychopathic Ward on January 9, 1939 and discharged April 4, 1939.

Diagnosis: Involutional Melancholia

Duration of stay in Hospital: 83 days

Number of Metrazol convulsions: 4

Condition on discharge: Improved

The symptoms of the present illness were gradual in onset and commenced in the summer of 1938. At that time patient started to exhibit loss of general interest, refusing to take part in social activities, and was restless and losing weight. He slept well and had an excellent appetite. In September he went back to teaching but was gradually becoming more nervous, restless and depressed. Delusions of sin and guilt were next noticed, believing himself to be a thief and that he did not deserve his insurance. He asked his wife to watch him carefully as he feared he would commit suicide.

In January, following one psychiatric consultation, the patient felt relieved for several hours. However, the following morning he was again very depressed and his wife found him lying on the bathroom floor in what was described as an "hysterical attack." Marked agitation and restlessness followed this. Three days later (January 9, 1939) the patient was admitted to the Charles V. Chapin Hospital.

The patient was ambulatory upon admission, cooperative and well oriented but depressed. Physical examination was essentially negative save for mild sclerotic changes. Fundus examination was negative. Blood pressure 110/65. Blood Wassermann negative; Hinton negative. Blood chemistry: Sugar 100, N.P.N. 31. Spinal fluid Wassermann negative, Pandy 0, Protein 25.

Behavior on the ward was characterized by apathy, mild irritability, depression, refusal to mix with other patients, anorexia and seclusiveness. His mental content was chiefly concerned with delusions of unworthiness. Symptoms of auditory hallucinations were present but never admitted. Some confusion and disorientation at times were recorded but this may have been because of the apathy and preoccupation present.

On January 16, 1939 Metrazol therapy was instituted. In all he received four treatments after which Metrazol was discontinued because of complaints of severe headaches and confusion. Much of his agitation had disappeared and a more active interest in ward affairs was noticed. The affect, content and behavior all continued to improve, the patient remaining in the hospital until April 4, 1939 at which time he was discharged home as improved.

Early this year the complication of injury to the bodies of the thoracic vertebrae as a result of Metrazol therapy has caused an investigation of twenty-two patients. In this group there have been found pathological changes comparable to anterior arch compression fracture chiefly in the mid-dorsal region in six cases and negative X-ray findings in the other sixteen. In some cases, X-rays have been taken before the Metrazol was started and checked between each injection. Orthopedic opinion varies on the condition found and the cause of the injury.

1. Bennett. A. E., Omaha, Nebraska: Personal Communication.

Conclusion

1. A composite of fifty-nine cases have been presented.
2. There has been only a gross determination of the end result as reflected in the disposition of each case, whether returned home or hospitalized further.
3. Thirty-seven (62.8%) are at home.
   Twenty-two (37.2%) have been further hospitalized.
4. Twenty-two cases have been investigated with reference to the possibility of spine injuries. Of this group, six cases have shown pathological changes, chiefly in the mid-dorsal region.

RESULTS AND COMPLICATIONS OF METRAZOL THERAPY FOR MENTAL DISEASE

Charles Rupp, M.D.
Howard, Rhode Island

Metrazol convulsive therapy, introduced by Von Meduna[1] in 1935 on the basis of an apparent biological antagonism between epilepsy and schizophrenia, has been utilized extensively in the treatment of mental disease. The pooled results in approximately three thousand cases treated in various centers in the United States and abroad have been reported.[2] More recently its use has been extended to the affective and other so-called "functional" mental disorders.[3] While the results have been encouraging, recent reports of serious complications in the form of compression fractures of the dorsal vertebrae and other severe bony injuries[4, 5, 6] indicate that the treatment is not without danger and the question arises as to whether or not further use of the treatment is justified. The results obtained and complications encountered during our experience with a series of fifty-one cases treated in the past year at the Rhode Island State Hospital for Mental Disease have therefore been analyzed for the purpose of formulating criteria regarding further use of the treatment and the prevention of serious complications.

From the Adolf Meyer Clinic of the Rhode Island State Hospital for Mental Diseases.
Read before the Journal Club of the Rhode Island State Hospital for Mental Diseases, June 22, 1939.

The detailed technique, precautions, and contra-indications in administering the treatment have been fully described by others.[7,8,9] In brief, a series of convulsions is induced by the intravenous injection of a 10% solution of Metrazol (Bilhuber-Knoll). The necessary dosage has ranged from 2 cc. to 12 cc. Treatments are given every second or third day. Usually nine to twelve convulsions are induced in each patient. (See Table I and II). Renal, cardio-vascular, and hepatic disorders, as well as acute and chronic infections are generally considered as contra-indications to administering the treatment. Strecker and his co-workers[10] have reported subarachnoid hemorrhages and changes in the brain cells of monkeys receiving extensive treatment. For some time, the maximum number of convulsions induced by us has not exceeded fifteen.

Case Material

Of the fifty-one patients whose series of treatments were concluded by June 15, 1939, thirty-eight had been diagnosed clinically as schizophrenia, while thirteen were diagnosed as some form of affective psychosis. (Manic-depressive, depressed, or involutional melancholia). Treatments were prematurely terminated in three women of the schizophrenic group before an adequate course of treatment could be administered and these cases are not included in our survey. One of these three patients presented symptoms of typhoid fever after three treatments; another with moderate hypertension showed such a severe general reaction to the first convulsion that further treatment seemed inadvisable; while in the third, intravenous injections were not possible because of inadequate veins.

Results

The results in the remaining thirty-five schizophrenic patients are recorded in Table I.

From Table I, it is seen that 18 or 51.4% of the schizophrenic patients benefited from the treatment while 17 or 48.6% derived no benefit. In a large group of patients not receiving Metrazol therapy only 19.3% were improved. While the follow-up period for the Metrazol treated patients has been short, all patients discharged from the hospital have continued to adjust to the outside world. It is to be noted that the results obtained are influenced by the duration of symptoms prior to the onset of treatment and the clinical type of the schizophrenic process. While 80% of the patients with symptoms of less than six months' duration were benefited, only 33% of those with symptoms of more than eighteen months' duration were helped. No patient with symptoms of more than five years' duration improved. Best results were obtained with the catatonic type, not quite as good with the paranoid type; while the hebephrenic group showed the least benefit. Our results in respect to the influence of duration and clinical type, in general, parallel the findings of other workers.

Table I

RESULTS OF METRAZOL THERAPY IN SCHIZOPHRENIC GROUP

Present status	
Out of hospital	14 (40.0%)
Still in hospital	21* (60.0%)

	Much improved **	*Improved*	*Unimproved Improved but later relapsed*	*Unimproved No change*
Males	7	5	4	10
Females	3	3	1	2
Total	10 (28.6%)	8 (22.8%)	5 (14.3%)	12 (34.3%)

Duration of symptoms prior to onset of treatment	*Much improved*	*Improved*	*Unimproved Improved but later relapsed*	*Unimproved No change*
Less than 6 mos.	6 (60%)	2 (20%)	0	2 (20%)
6 to 18 months	3 (30%)	2 (20%)	3 (30%)	2 (20%)
Over 18 months	1 (6.6%)	4 (26.6%)	2 (13.3%)	8 (53.2%)

Subtype	*Much improved*	*Improved*	*Unimproved*
Catatonic	7 (46.6%)	3 (20%)	5 (33.3%)
Paranoid	3 (30%)	2 (20%)	5 (50%)
Hebephrenic	0	3 (30%)	7 (70%)

	Males	*Females*
Age range	18 to 42 years	19 to 40 years
Average age	28.1 years	27.7 years
Dosage range	2 to 12 cc.	2 to 10 cc.
Average dosage	7.1 cc.	7.6 cc.
Number of convulsions—range	3 to 21	9 to 17
Average Number of convulsions	13	12.8

* Includes four patients out of the hospital part time, but whose treatments have been completed too recently to permit discharge.

** Much improved indicates that the patient is able to adjust to his former level on the outside world, has some insight, and is either symptom-free, or residual symptoms are limited to a slight degree of emotional flattening.

Improved indicates that the patient is able to make a satisfactory adjustment to the outside world, although sometimes at an inferior level, that the psychotic symptoms are ameliorated, although still present and that insight is lacking.

Affective Group

The results in the group with affective psychoses are recorded in Table II.

From Table II, it is seen that the results of treatment were even better in the affective group, 12 or 92.3% of the patients being benefited. An equally high percentage of good results in this group has been reported by others. Meduna and Friedman[2] report 80 of 129 cases (73.4%) as recovered or greatly improved. Cottington[11] reports

that of 20 depressed women, 17 underwent full remission and 3 showed improvement. All of Bennett's[12] 21 cases were improved. In the affective group the influence of the duration of symptoms prior to beginning treatment does not appear to be as important as in the schizophrenic group.

TABLE II

RESULTS OF METRAZOL THERAPY IN PATIENTS WITH AFFECTIVE PSYCHOSES

Present Status			
Out of hospital			8 or 61.3%
Still in hospital			5* or 38.5%
	*Much Improved***	*Improved*	*Unimproved*
Males	6	0	0
Females	3	3	1
Total	9	3	1
Percent	69.2%	23.1%	7.7%
Duration			
Less than 6 months	2 (100%)	0	0
6 to 18 months	4 (80%)	1 (20%)	0
Over 18 months	3 (50%)	2 (33%)	1 (16%)
Diagnosis			
Manic-depressive, depressed	6 (66%)	2 (22%)	1 (11%)
Involutional melancholia	3 (75%)	1 (25%)	
	Males		*Females*
Age range	33 to 58 years		30 to 42 years
Average age	48.5 years		38.3 years
Dosage range	3 to 12cc.		6 to 12 cc.
Average dosage	7.3 cc.		6.8 cc.
Number of convulsions—range	7 to 12		4 to 16
Average number of convulsions	9.3		10.7

* Including 2 patients spending part time at home and whose discharge is anticipated shortly.

** Criteria of improvement same as for schizophrenic group.

In all patients, of either schizophrenic or affective groups, showing any improvement either sustained or transient, some evidence was noted by the end of the fifth treatment. The degree of improvement evident at this time might be augmented by further treatment, but no patient failing to show improvement by this time improved later regardless of the number of treatments given. The number of the treatment at which some improvement was first noted is shown in the following table:

Treatment Number	1	2	3	4	5	6	7 or later
Schizophrenic Group	3	9	10	1	1	0	0
Affective Group	1	5	6	1	0	0	0

During the course of treatments, patients show an increased appetite and usually gain in weight. No patient requiring tube-feeding prior to the treatments failed to begin eating spontaneously, regardless of the degree of improvement noted in the mental state.

Complications

The complications encountered in our experience have varied from mild to severe. Of the mild complications, nausea and vomiting following the treatment have been frequent, especially if an injection failed to produce a convulsion. Providing that treatments are given on an empty stomach and care is taken to prevent the aspiration of vomitus, these complications are not troublesome and the symptoms subside by the time of the noon meal. Dosages insufficient to produce a convulsion may evoke instead a state of anxiety varying from mild tension and unrest to extreme fearfulness, closely resembling a mild state of panic. Such anxiety states, fortunately, are brief in duration and can be controlled by hydrotherapeutic means. While unpleasant, they do not appear to be harmful and in several cases the first evidence of improvement has followed their occurrence.

Transient nocturnal enuresis was noted following the fifteenth or later treatment in five patients having a prolonged course. This symptom subsided spontaneously within a week or two following termination of the treatments. Its cause is unknown. It was not related to the patient's mental state. Neurological and urine examinations were negative.

Subluxation of the jaw, a frequent occurrence in the experience of others, has not occurred in our series of cases.

Among the neurological complications observed were transient facial palsy (1 case) and transient internal quint (1 case). In both instances recovery was spontaneous with no residual defect and in each case a history of prior local neural weakness was obtained.

Status epilepticus occurred in three patients. In two cases, the status took the form of a series of petit mal-like attacks occurring subsequent to two injections administered partially outside the vein. In the third patient two grand mal and a series of petit mal attacks occurred on the second treatment day following two injections, the first of which produced an anxiety attack. Since the patient showed dramatic improvement following this experience, another injection was given ten days later. On this occasion the patient had thirteen grand mal seizures in rapid succession before sodium luminal could be given intravenously. The patient recovered promptly with her mental condition so greatly improved that she could be discharged although no further treatments were given. In all instances, the status was terminated promptly by injection of sodium luminal grs. 5-10 intravenously. Although it is considered advisable to repeat the injection if a convulsion is not produced each treatment day, we have, in the light of the above experience, limited the number of injections on any one day to two.

Two of the manic-depressive, depressed patients showed a transient period of overactivity and overtalkativeness with mild euphoria during the course of their improvement, but these symptoms subsided within ten days to two weeks.

While pulmonary emboli, lung abscess, transient auricular fibrillation, and fractures of the pelvis, humerus, and femur have been reported as severe complications by others; the only major complication encountered in our patients has been the occurrence of compression fractures of the dorsal vertebrae similar to those described by Bennett and Fitzpatrick[5] and others. Previous to their report, a few of our patients had complained of soreness under the ribs and mild backache, after the first few convulsions, but as physical examination was negative and the symptoms ceased in a few days, no particular significance was attributed to them at the time. Since, however, X-ray examination of the dorsal spine has been made in all available patients who have received Metrazol and roentgenographic evidence of compression fracture of the dorsal vertebrae has been found in 13 of 36 cases (36.1%). The degree of fracture found has varied from a slight condensation of the upper vertebral margin to compression of the vertebrae to approximately 50% of its normal height with involvement of from one to five vertebrae.

The occurrence of these fractures is not related to the number of convulsions, dosage or nutritional status of the patients, nor is the presence or absence of symptoms a reliable guide to their occurrence. Some patients complaining of backache have shown no roentgenographic evidence of fracture, while some patients clinically symptom-free have been found to have fractures on X-ray examination. In several cases in which treatment had been completed nine to twelve months previously, with no indications of symptoms, fractures were detected by X-ray.

It is thought that such compression fractures result from a sudden violent anterior flexion of the vertebral column during the clonic phases of the convulsion. Our experience substantiates this assumption. Treatments have been given by us on various wards of the hospital with varying amounts of assistance from the nursing staff. Originally, four nurses or attendants assisted at the treatments, one nurse being in charge of inserting the tongue gag and supporting the patient's jaw to prevent dislocation; another held the patient's arms adducted against the trunk while the third held the legs adducted at the knees; and the fourth placed her hands over the patient's shoulders, limiting the anterior thrust at these joints. No attempt to restrain the movements was made aside from limiting any sudden violent movements which might occur. However, on some wards the number of nurses available for assistance has been limited and treatments in some instances were given with only one nurse in attendance. An analysis of the incidence of fractures in relation to the degree of supervision exercised during the convulsive movements yields the following results.

	Number of cases	
	With fracture	*No fracture*
Supervision adequate	1 (6.6%)	15 (93.3%)
Supervision partly adequate	7 (46.6%)	8 (53.3%)
Supervision inadequate	5 (100%)	0

It thus seems apparent that the incidence of fractures can be controlled by adequate supervision. The most severe fractures were encountered in the cases with inadequate supervision while the one fracture under supervision considered adequate was limited to a very minimal condensation of the upper border of one vertebra. Ebaugh,[9] using somewhat similar supervision reports no occurrence of fractures. Although no serious aftereffects of these fractures have been reported, the possibility of later herniation of the vertebral discs has been suggested.[5]

Discussion

In our experience, Metrazol therapy has been of distinct value, the best results being obtained in the affective psychoses and in schizophrenic cases where the duration of symptoms has not exceeded eighteen months and the cases are of the catatonic and paranoid type. It has also been of value in inducing patients to eat and increasing their weight. The only serious complications encountered by us were the occurrence of compression fractures of the dorsal vertebrae, the incidence of these fractures being influenced by the amount of supervision exercised during the convulsive movements. While we consider such fractures serious, so far no permanent disability has resulted and frequently the fractures were detected only by X-ray examination.

In the future, to avoid further occurrence of fractures, no treatments will be given unless adequate supervision is available. In addition, greater

discrimination is being made in the selection of patients for treatment, particularly along the lines indicated by the results so far obtained. The number of treatments in the individual course is being reduced and the course is not prolonged beyond six treatments, if no improvement has been noted by that time.

Summary

1. Eighteen (51.4%) of thirty-five schizophrenic patients and twelve (92.3%) of thirteen patients with affective psychosis benefited as a result of Metrazol therapy.
2. In the schizophrenic group, the best results were obtained in cases with symptoms of less than eighteen months in duration and in the catatonic and paranoid types.
3. No patient requiring tube feeding prior to the onset of treatment failed to begin to eat spontaneously and most patients gained weight.
4. Patients failing to show some improvement by the end of the fifth treatment did not show improvement later, regardless of the number of treatments administered.
5. The only severe complication encountered was the occurrence of compression fractures of the dorsal vertebrae in thirteen of thirty-six cases (36.1%).
6. The incidence of these compression fractures was greatest in those cases where treatments were given without adequate supervision to limit the movements during the convulsion.
7. To prevent the incidence of fractures in the future, treatments are being given only under adequate supervision. Greater discrimination in the selection of cases is being exercised and the course of treatments is being limited in those cases failing to show improvement by the sixth convulsion.

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ORGANIZED PAYMENTS FOR MEDICAL SERVICES

The American Medical Association, a voluntary combination of members of state and county medical societies, operating without legal force but by persuasion, has raised the standards of education in American medical schools and of treatment in American hospitals to an unprecedented level. It has maintained the ethical and altruistic principles of American medicine at a point unapproached by any other trade or profession.

For generations, members of the medical profession have cared for the health of the American people with little regard as to whether or not they would be paid for their services. They have freely given not the waste but the best of their stock of time and skill. Indeed the objection has often been taken that their charity patients received better treatment than did those who paid.

Advancement in medical science has greatly increased the cost of medical care. X-rays are essential in treatment of fractures for the protection of the surgeon as well as for the benefit of the patient. New drugs, serums, physio-therapy, laboratory tests, and the benefit of surgery have multiplied the expense of treatment. With increased cost, the proportion of patients who can pay for medical care has steadily diminished until, as is estimated, no more than six per cent of the patients can well afford the expense of sickness.

The present problem is this: — How can the American medical profession continue to carry the steadily increasing load of free service? Economists fail to understand or appreciate the unselfish conduct of medicine in the past and the present. If there is any answer to this present problem it must be found by organized medicine itself.

It would stretch the imagination of a social planner to devise any scheme for organized payment for medical services that is not described in the publication of the Bureau of Medical Economics of the American Medical Association on "Organized Payments for Medical Services." Several hundred plans for medical care of the indigent involving governmental support and medical society management are explained. Social Security legislation has brought about changes in medical arrangements reaching into almost every locality in the United States and affecting health departments, medical societies, and state and local governments. Types of plans proposed by the Farm Security Administration to provide medical services to Administration clients in 127 counties and covering 100,000 low income families are described. Medical societies have organized postpayment and prepayment plans of medical care offering a wide selection of types. Some provide for a cash indemnity to be paid to the insured with which he can purchase his own medical service and others provide medical service directly.

Industries, unions, fraternal organizations, and all sorts of mutual societies provide medical benefits for their members by a variety of prepayment devices. Some 3,000,000 persons are covered by group hospitalization plans, which show a wide variety of relations with state and county medical societies. Commercial insurance companies, all of whom pay benefits in cash, are also entering this field on a large scale. It is estimated that approximately $300,000,000 in cash is paid out annually by insurance companies to assist in paying medical bills.

The House of Delegates of the American Medical Association has endorsed cash indemnity prepayment plans, but has not sought to prohibit any of its component societies from cooperating with or organizing other types of prepayment for medical service provided their character is not such as to render it impossible to give good medical service.

The number and variety of the plans for medical services — operating and proposed, postpayment and prepayment, service and cash, medical society and other organization sponsored — give proof of the efforts that are being made to supplement the private practice of medicine and indicate a desire to discover, by social experimentation, a solution of local medical problems.

Organized Payments for Medical Services. By the Bureau of Medical Economics, American Medical Association. Paper. Pp. 185. Chicago: American Medical Association, 1939.

THE HOSPITAL SERVICE PLAN

The Rhode Island Hospital Service Corporation, known as the Blue Cross, is now in full operation. Next to the hospitals, the medical doctors will be more closely associated with this Service than any other body, for no person may be admitted to a hospital for treatment under the Blue Cross Plan without recommendation from a reputable physician.

It is, therefore, on the shoulders of our doctors that responsibility for preventing abuses in hospital admissions must fall. Your help in making this Hospital Service Plan a worthwhile benefit for the people of this state is sincerely requested. That abuses may not arise in the use of Blue Cross Service your attention is called to the following conditions:

1. No person may be admitted to a hospital for treatment under the Blue Cross without a recommendation to that effect from a reputable personal physician.

2. The Blue Cross does *not* cover admission to any hospital solely for the purpose of *diagnosis*. Any patient who asks to be admitted to a hospital for that purpose should be informed that bills for this service will *not* be covered by the Blue Cross.

3. The Blue Cross does not undertake to cover persons for illnesses or conditions *known to exist* by the subscriber or any member of his immediate family at the time he became a member of the Blue Cross. It is here that the attending physician will play perhaps his most important role, for it is obvious that, as *no physical examination*, or sworn health statement, *is required* at the time of application, the *Blue Cross must depend on* the *report of* the attending *physician* as to the *date* at which the *condition first became known* to the patient or his family.

ONLY if all our doctors concerned with Blue Cross patients exercise the greatest care in preventing this possible abuse can this community cooperative service be carried on to the equal advantage of all its members.

4. Extension of the *normal period* of hospitalization required for a specific case should *not be* permitted in the case of Blue Cross patients where it would not ordinarily occur in the case of private patients.

5. Care should be taken *not to hospitalize patients for conditions* for which they would ordinarily remain at home if they did not have Blue Cross membership. Such abuse would destroy the true value of the plan.

Extract from a letter by Dr. Harry C. Messinger, President, to the members of the Providence Medical Association. Approved by the Council of the Rhode Island Medical Society, September 22, 1939.

RHODE ISLAND MEDICAL SOCIETY

Minutes of the One-hundred and Twenty-eighth Annual Sessions

Report of the Committee on Hospitalization Insurance

On January 6, 1939, this committee reported at a special meeting of the Rhode Island Medical Society held at the Medical Library. That report can be found in the February number of the Rhode Island Medical Journal.

Since that time the committee or parts thereof have met on several occasions. A meeting was held with representatives from the X-ray group at which the pros and cons of X-ray versus services in the plan were discussed. Mr. Kenneth MacColl and Mr. Lindblad attended this meeting. An effort was made to iron out some of the misunderstandings or difficulties and to include in services offered, if possible, some stated sum allotted toward the cost of X-ray. This received little support, it being the desire of those confining their work to X-ray, that X-ray not appear at all in the benefits of the Plan.

On February 23, 1939, representatives from the Medical Society committee met again with the representatives from the Hospitalization Plan Committee at which meeting Dr. Channing Frothingham of Boston discussed medical care versus the Plan. At this time numerous benefits to be offered under the Group Hospitalization Plan were accepted. None of these pertained to services or benefits that involved medical care and, therefore, are not in this report. The following items were referred to our committee for further study—X-ray and anesthesia.

At a subsequent meeting with Dr. Brackett and Mr. Saunders, the newly appointed director, the following disposition was made of the X-ray and anesthesia factors under the Plan: The administration of anesthesia is medical care and should not appear as a benefit under the Plan. X-ray, likewise, is considered as medical care and should not appear as a service in the Plan. With respect to routine laboratory work . . . what should and should not be included as services is better left to the Hospital Service Corporation and various member hospitals particularly with reference to such as pathology which is handled rather differently in the different member hospitals according to facilities. Therefore, the committee can make no definite recommendations in this department. The inclusion of basal metabolisms as hospital service seems justified as, in most instances, they are done by hospital workers and the reports put on the charts much in the same way as laboratory work. Medical care does not appear to any extent here and basal metabolisms are allowed in most plans throughout the country.

With respect to physiotherapy it is felt again that this should be left with the Hospital Service Corporation and the various member hospitals in as much as facilities vary so greatly in the member hospitals. This work is largely done in the hospitals having this service by technicians employed by the hospital and for such service we see no objection to it being included as a hospital benefit in the plan, if the Hospital Service Corporation desires to use it.

Electrocardiography, however, has a somewhat different status. The interpretation of the electrocardiograph, which is the important part of electrocardiography, is decidedly medical care and it is recommended by this committee that it not be included under the plan as service offered. It is understood that some hospital cardiology departments depend upon the income from this source to maintain their department of cardiology. Furthermore, there is an increasing number of physicians who are devoting much of their time to the study and interpretation of electrocardiographs, therefore, it does not seem fair to sell their services under the plan.

In summary, your committee recommends that routine laboratory facilities and physiotherapy be offered as hospital benefits or services under the plan according to the decisions made by the various member hospitals and the Hospital Service Corporation. Likewise, that basal metabolisms be offered as service in the plan, if desired, but anesthesia, X-ray, and electrocardiography, in all of which medical care is definitely involved, should not appear as benefits or services offered by the Hospital Service Corporation.

It is further recommended that any final decision on what constitutes medical care rest until the House of Delegates of the American Medical Association, which it is understood is now in session, has made its report on matters pertaining to medical care in Hospitalization Insurance Plans.

At a meeting at the Hope Club on February 28, 1939, the Hospital Service Corporation of Rhode Island took form. Officers were elected. The President of the Rhode Island Medical Society,

Dr. Brackett, was elected Vice-President of the Corporation.

In as much as the by-laws of the Corporation provide that a physician designated by the Rhode Island Medical Society be a member of the Board of Directors and Executive Committee it is necessary for the Rhode Island Medical Society to take some action on how its representative shall be designated. This representative is to act in the interests of the medical profession. This action would seem to fall to the House of Delegates of the Rhode Island Medical Society to decide if this shall be by election or by appointment by the President and how long his term of office in the Service Corporation shall be. It seems desirable that it should be for more than one year in order that he may not be replaced before he has become entirely familiar with the technique and policies of the hospital service insurance plan.

The present President of the Rhode Island Medical Society accepted the election to the office of Vice-President of the Corporation and to serve on the Board of Directors and Executive Committee with the express understanding that if it seemed advisable to the House of Delegates that someone other than the President of the Society should be elected, he would resign in favor of whomever the Society should designate.

For your consideration, it is recommended to the House of Delegates that it approve the choice of the Hospital Service Corporation for Vice-President to serve as a member on the Board of Directors and the Executive Committee and that this member of the Service Corporation be elected for a period of not shorter than three years, and that he act as a special representative of the Rhode Island Medical Society to safeguard the interests of the medical profession.

It is further recommended that this representative shall be designated by election by the House of Delegates and reported to the Rhode Island Medical Society according to custom or the by-laws.

Respectfully submitted,

Isaac Gerber, Providence
Hartford P. Gongaware, Westerly
James Hamilton, Providence
John F. Kenney, Pawtucket
Walter C. Rocheleau, Woonsocket
Alfred M. Tartaglino, Newport
Guy W. Wells, Providence
Robert H. Whitmarsh, Providence
Elihu S. Wing, *Chairman*, Providence

Report of the Publicity Committee

During the year 1938-1939 the Publicity Committee of the Rhode Island Medical Society functioned chiefly in furnishing reports to the newspapers in the form of advance notices and abstracts of papers read in connection with

1. The 1938 Annual Meeting of the Rhode Island Medical Society.
2. Series of Sunday lectures in the fall of 1938.
3. Sunday afternoon lectures, spring of 1939.

In addition to this the Committee furnished notices and copy for advertisements of all of the talks given over the radio by members of the Society under the auspices of the Committee on Education during the winter of 1938-1939.

It has been the practice of the Committee during the past year to secure manuscripts or abstracts of all speakers' papers some time in advance of presentation, and mimeographed abstracts of all such papers were forwarded to all the newspapers published in the State of Rhode Island. Having this material in clear readable form in advance of all meetings has been greatly appreciated by the press.

Respectfully submitted,

Charles Bradley, M.D.,
Chairman.

Report of the Committee on Necrology

It is with deep regret yet with lasting memories of the pleasant association with and high regard for their professional achievements that we record the passing of the following members of our Society during the year just gone:

Richard P. Boucher	December 25, 1938
John Champlin	November 27, 1938
Clifford B. Colwell	March 9, 1939
George H. Crooker	January 12, 1939
V. Lee Fitzgerald	September 24, 1938
Arthur H. Harrington	March 12, 1939
William H. Higgins	May 23, 1938
William A. Hillard	July 1, 1938
George J. Howe	June 6, 1938
Arthur T. Jones	March 19, 1939
Daniel S. Latham	September 21, 1938
Alfred M. Merriman	January 9, 1939
Edward V. Murphy	March 9, 1939
Edward E. Pierce	January 28, 1939
Vito L. Raia	November 21, 1938
Byron U. Richards	February 15, 1939
Creighton W. Skelton	June 26, 1938
John L. Sprague	April 25, 1939

Respectfully submitted,

C. H. Woodmansee, M.D.,
Chairman.

THE MEMORIAL HOSPITAL

Schedule Beginning October 1, 1939

MEDICAL SERVICE: Medical Ward Rounds at 11:00 A. M. every Saturday. Medical Symposium on the last Friday of each month in the Nurses' Home Auditorium. The Symposium for Friday, October 27, will be on "Hormones."

SURGICAL SERVICE: Surgical Pathological Conference on the second Wednesday of each month at 11:30 A. M. Surgical Ward Rounds at 11:00 A. M. every Wednesday.

INTERNS' ALUMNI CLINIC: The entire day on Wednesday, November 1.

CLINICAL PATHOLOGICAL CONFERENCE: The second Wednesday of each month from 12:00 Noon to 1:00 P. M.

TUMOR CLINIC: The first and third Thursdays of each month at 10:00 A. M.

MEDICAL STAFF MEETINGS: Meeting of the entire staff on the second Wednesday of each month at 1:00 P. M.

UROLOGICAL SERVICE: Ward Rounds at 12:00 Noon on the first and third Mondays of every month.

ORTHOPEDIC SERVICE: Ward Rounds at 11:00 A. M. every Saturday.

OBSTETRICAL SERVICE: Conference on the last Friday of each month, at 12:00 Noon.

PEDIATRIC SERVICE: Ward Rounds and Discussion of Cases at 12:00 Noon every Thursday.

EAR, NOSE AND THROAT SERVICE: Ward Rounds and Discussion of Cases at 10:30 A. M. on the second Wednesday of each month.

CHARLES V. CHAPIN HOSPITAL

Dr. Genarino R. Zinno left September first, after filling in as assistant superintendent from the first of July. He intends to enter private practice in Providence.

Dr. William J. Bell became assistant superintendent on September first. He previously served a four-month internship here and before that was at the Rhode Island Hospital. On August 2 he was married in Montreal to Miss Agnes M. Hill of that city and they are now living at 41 Cyr Street, in Providence. We regretfully record here that Dr. Bell's mother, Mrs. William S. Bell, passed away at the Rhode Island Hospital on September 3 after a short illness.

Drs. Harry R. Kellett, James P. McCaffrey, and E. Mansfield Gunn completed internships September 30. Dr. Gunn will begin a junior internship at the Lying-In Hospital on October 15, and on November 15 starts a two-year service at the Rhode Island Hospital.

On October first, Drs. Luther R. Lewis, Linus A. Sheehan, and David J. Fish will start services of six months each. Dr. Fish is a resident of Providence who attended Brown University, and finished his training at the Jefferson Medical College of Philadelphia this year. Dr. Sheehan is from Edgewood. He was graduated from Holy Cross College and completed his studies this year at the Tufts College Medical School. Dr. Lewis comes from East Providence and attended Brown University. He was graduated from Harvard Medical School this year.

RHODE ISLAND HOSPITAL

Schedule for October, 1939

Mondays:

Gyn. Tumor Clinic, 1:30 P. M.

Surgical Conference, 12 Noon, October 9th, 23rd

Thoracic Clinic, 4:30 P. M.

Tuesdays:

Gastro-Intestinal Clinic, 9:30 A. M.

Pathological Conference, 12 Noon, October 10th, 24th

Wednesdays:

Regular Tumor Clinic, 10:00 A. M.

Thursdays:

Gyn. Staff Meeting, October 5th

Orthopedic Grand Rounds, 9:00 A. M.

Thoracic Clinic, 11:30 A. M.

Fridays:

Fracture Rounds, 11:00 A. M.

Pediatric Grand Rounds, 11:00 A. M., October 13th, 27th

GU Staff Meeting, 7:30 P. M., October 6th

Surgical Staff Meeting, 8:30 P. M., October 6th

Saturdays:

Neurological Grand Rounds, 9:00 A. M.

Medical Conference, 10:00 A. M.

Notice: The Gyn. Tumor Clinic has been changed from Wednesday, 2:00 P. M. to Monday, 1:30 P. M. The Regular Clinic will be held as usual on Wednesday morning.

RECENT BOOKS

THE ART OF ANAESTHESIA. By Paluel J. Flagg, M.D. Sixth Edition, revised, pp. 491 + XXVII, with 161 illustrations, Cloth $6.00, J. B. Lippincott Company, Philadelphia, 1939.

Flagg's "Art of Anaesthesia" was first published in 1916. The work immediately achieved a popularity which has continued to the present time and has allowed frequent revisions of the text. A set of the six editions gives a precise history of the practice of anaesthesia in this country for the past twenty-three years. In the present revision a great deal of new material has been added. The illustrations have been reviewed and many of them replaced by new and improved cuts. New chapters have been introduced on: Improved Technic for Intratracheal Anaesthesia; Newer Methods of Artificial Respiration; Basal Anaesthetics; Carbon Dioxide Absorption Technic; Cyclopropane; New Anaesthetic Agents and Technics; Dental Anaesthesia and Analgesia; The Art of Direct Intubation in the Unconscious Patient; Causes of Death in Anaesthesia; Pneumatology. While this revision has brought the book thoroughly up to date, the author has maintained the conservative attitude which has made the work of such lasting value. It is recommended as the standard work on the subject of anaesthesia as practiced in this country.

ALBERT H. MILLER, M.D.

A TEXTBOOK OF OBSTETRICS, with special reference to Nursing Care, by Charles B. Reed, M.D., F.A.C.S., Associate Professor of Obstetrics, Northwestern University Medical School; Head of Obstetrical Department, Wesley Memorial Hospital, Chicago, and Bess I. Cooley, R.N., Supervisor and Instructor, Department of Obstetrics, Wesley Memorial Hospital, Chicago. Cloth, Price $3, pp. 476, with 209 illustrations. St. Louis, The C. V. Mosby Co., 1939.

During the past few years, a considerable number of books designed for the instruction of nurses in Obstetrics have been published. Many of them have been open to the criticism that they were too technical, attempting to teach the pupil nurse much that she did not need to know, and giving the impression that they were written for the student of medicine rather than for the student of nursing. This, the latest text for nurses, does not err in this respect. It covers the whole subject of Obstetrics with accurate statements, reflects the most modern ideas, and withal is couched in clear and readable English. The discussions of the various topics are thorough without being verbose.

The book covers first the fundamentals of Anatomy, Physiology, Pregnancy and Prenatal care. The latter part of the work, in each of the seven chapters (out of a total of seventeen), stresses the nursing care of obstetric patients in detail, giving minute directions for the various procedures carried out wholly or in part by the nurse. These are so complete that the book should be of great usefulness in teaching. Appended is a full Glossary. It should be mentioned finally that the work is printed without errata, on a slightly tinted gray paper of high quality, making it a most attractive volume.

HERBERT G. PARTRIDGE, M.D.

EPIDEMIC ENCEPHALITIS, ETIOLOGY, EPIDEMIOLOGY, TREATMENT. Third Report by the Matheson Commission, Willard C. Rappleye, Chairman, pp. xi + 493, Fabrikoid, $3.00. Columbia University Press, Morningside Heights, New York, 1939.

The Matheson Commission was established through the generosity of Dr. William J. Matheson in the spring of 1927. The work of the first two years consisted in collecting the published data on the epidemiology, etiology, and treatment of epidemic encephalitis. The results of this study were published in the "First Report" in 1929. A second, shorter report of a similar nature was published in 1932. The "Third Report" has been prepared on much the same lines as the first two reports. The long continued follow-up of a large number of patients suffering from this disease or other conditions closely simulating it has provided a volume of clinical evidence and experience that has proven of greatest value in differential diagnosis and in the appraisal of methods of treatment. The bibliography has been carried on from the beginning of 1930 through the first half of 1937, and many of the more important references in the second half of 1937 and the first half of 1938 have been included. In the laboratory program several viruses have been isolated and vaccines have been produced and tried in treatment.

THE VAGINAL DIAPHRAGM, ITS FITTING AND USE IN CONTRACEPTIVE TECHNIQUE. By LeMon Clark, M.S., M.D., pp. 107, with 53 illustrations. Cloth, $2.00. The C. V. Mosby Company, 3525 Pine Boulevard, St. Louis, 1939.

A handbook for physicians who are called on for advice on contraception. The subject is covered exhaustively. The book is profusely illustrated.

WHAT IT MEANS TO BE A DOCTOR. By Dwight Anderson. pp. 87, Cloth, $1.00, paper cover, 25 cents. Public Relations Bureau, Medical Society of the State of New York, 2 East 103rd Street, New York City, 1939.

This volume is a brief treatise aiming to convey an impression of the doctor's way of life; his character, his education, his ability, and his skill. A questionnaire which asked four questions was sent to 500 general practitioners, surgeons, pediatricians, and many other specialists throughout the country. The questions: 1. What qualities of mind and character do you consider most important for the practice of medicine as a profession? 2. How old were you (approximately) when you determined to be a doctor? 3. What decided you? (Please explain the incident, influence or reason which resulted in fixing your ambition.) 4. If you had a son, would you wish him to select medicine as a career?

The replies are digested. The author then pursued inquiries which are made a part of the book in the narrative of the careers of three typical personalities, traced through childhood, boyhood, medical school, hospital training and private practice, and a little way into some of the work of his medical societies and scientific organizations.

Syphilis and Its Accomplices in Mischief: Society, the State and the Physician. By George M. Katsainos, M.D. pp. 554, price $5.00. Privately printed (in English) at Athens, Greece, 1939. Appended: Katsainos, M. D., Marriage and Syphilis — A Treatise on Eugenics, pp. 162, Wright & Potter, Boston, 1923.

Dr. Katsainos, of Boston, has written an extremely interesting critical review of the history of syphilis, of the early and present day methods of treatment, of the serologic tests, of the public and private ways of fighting the disease.

The physician interested in syphilis will enjoy the recollection of established facts and will gain a great deal of new information from the pen of a scholar of Greek and Latin, a student of syphilology and a philosopher.

The book, condemned as "dangerous," ends with the following conclusion: "A disease, the very name of which is prudishly avoided by the lay press, and the victims of which society hates and condemns, the state prosecutes and punishes, and the medical profession deceives and plunders, and which is impossible to fight in the open, can not be defeated, conquered, and consequently exterminated."

With such a radical conclusion and with passages like the following: Oh!, Wassermann, Oh!, Salvarsan, in thy name how many crimes have been committed," it is no wonder that an official war was waged against this book. However, so much trash goes into print nowadays, that I cannot understand why this book, according to the author, has been turned down by over 150 publishers; medical libraries have refused to catalogue it and medical journals to review it. What of it, if the author maintains that there is only one spirochete, apt to change its form and activity, to hibernate? What of it, if he maintains that the spirochete is indestructible and will accompany his host to the grave? The same views are shared by a number of syphilologists.

The difficulty comes when, after exposing the evils, one has to suggest the remedy. The author maintains that only a life-long period of treatment, acting like repeated spore-killing sterilization, can eradicate syphilis. Those handling syphilitic patients know that such a procedure is next to impossible. Even putting the syphilitic per cent of our population in a concentration camp would not accomplish it.

Dr. Katsainos sharply denounces the evils coming from the bad members of our society, but from denunciation to eradication the distance is considerable, because it is normal for a human society to include among its members gangsters and saints.

He stresses the need of hygienic measures and everybody agrees on that, but how many syphilitics will carry them on for the rest of their lives?

Some of Dr. Katsainos' statements are a little queer, like the one that repeated lumbar punctures are causing neurolues (p. 188). He is particularly interesting and amusing when he touches some sore spots like Vernes sphilimetrie (p. 477), the treatment of syphilis with llama serum (p. 283), the public health ordinances on traveling syphilitics (p. 536) and, last but not least, MacFadden's refusal to print anything teaching that syphilis must be treated (p. 524).

In spite of its length, which is customary in European scientific writings, of some exaggeration, of the paucity of the offered remedies, the book can be read with pleasure from beginning to end. It is to be regretted that, being privately printed, it will not be accessible to every physician for meditation and digestion.

I do not believe it would be of much value for the layman. Like other true medical stories now flooding the press and the movies, ultimately it will do more harm than good, by inducing discouragement. This because of the incapacity of most laymen to distinguish between good and evil in medicine, no matter how intelligent and learned they may be.

F. Ronchese, M.D.

The Canned Food Reference Manual. Fabrikoid, pp. 242, with 41 illustrations, 23 tables and bibliography. American Can Company, 230 Park Avenue, New York.

The story leading up to the publication of the new "CANNED FOOD REFERENCE MANUAL," recently compiled by the Nutrition Laboratory, Research Department of the American Can Company, is an intensely interesting one. It was brought about through the realization that not only must reliable information on canned foods be made available to laymen but—equally important—more technical information on this great class of foods should be provided those professions which deal intimately with canned foods.

The products of the American canning industry have become so important to our modern civilization that it is indeed difficult to visualize how present-day life could proceed without commercially canned foods. For many years canning was a secret art and foods in tin containers were regarded as unusual or even mysterious. It is a well-known fact that people seldom trust to the fullest extent any class of foods whose method of manufacture is not clear to them.

Several decades ago, progressive forces within the canning industry realized the necessity of a better popular understanding of the nutritive values and wholesomeness of commercially canned foods. Since that time much educational publicity on canned foods has been issued for the benefit of the layman consumer.

Less than five years ago, it was found essential to provide more technical information for the professions. Consequently, in 1935, the American Can Company inaugurated its present practice of issuing each month in the journals serving the medical, dental, nursing, dietetic and home economics professions, a factual release covering in technical vein some phase of canned food knowledge. The great demand for some type of publication which would bring all these releases together in one binding, was met first by publication of "Facts About Commercially Canned Foods" in 1936, and later by issuance of "Nutritive Aspects of Canned Foods" in 1937. The present text has been prepared to amplify and extend, rather than to replace, the above prior publications.



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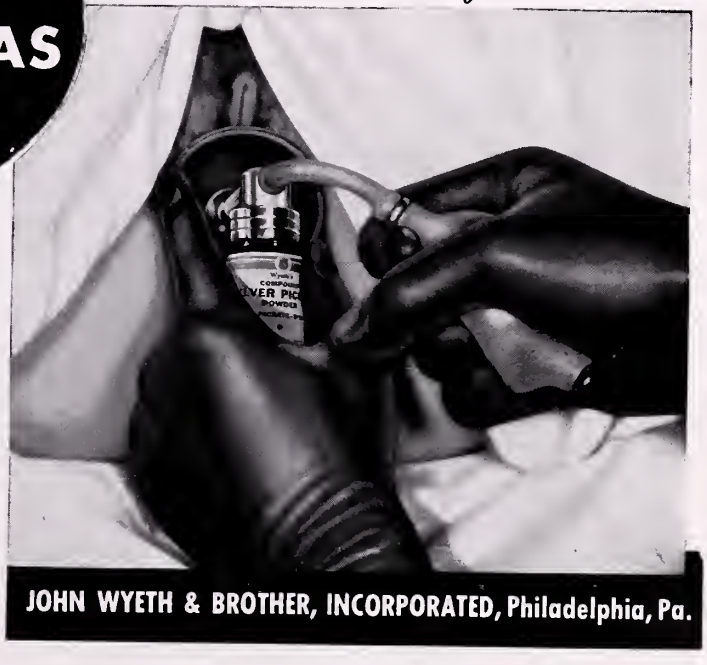
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October 31 and November 1

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Dr. Jesse G. M. Bullowa, New York City.
Clinical professor of medicine, New York University College of Medicine; visiting physician, Harlem Hospital and Willard Parker Hospital.

Dr. Benjamin W. Carey, Detroit, Michigan.
Assistant professor of pediatrics, Wayne University College of Medicine; bacteriologist, Children's Hospital of Michigan.

Mr. H. H. Clegg, Washington, District of Columbia.
Assistant director of the Federal Bureau of Investigation, United States Department of Justice, Washington, District of Columbia.

Dr. Eldridge L. Eliason, Philadelphia.
John Rhea Barton Professor of Surgery, University of Pennsylvania Medical School; professor of surgery, University of Pennsylvania Graduate School of Medicine; surgeon, Presbyterian and Philadelphia General hospitals.

Dr. Albert C. Furstenberg, Ann Arbor, Michigan.
Professor of otolaryngology and dean, University of Michigan Medical School.

Dr. Roscoe R. Graham, Toronto, Ontario.
Assistant professor of surgery, University of Toronto Faculty of Medicine; senior surgeon, Toronto General Hospital.

Dr. Charles C. Higgins, Cleveland, Ohio.
Surgeon, Cleveland Clinic.

Sir Thomas Lewis, Rickmansworth, England.
Director, Department of Clinical Research, Medical Research Council, University College Hospital Medical School, London.

Dr. Harvey B. Matthews, Brooklyn, New York.
Clinical professor of obstetrics and gynecology, Long Island College of Medicine; attending obstetrician and gynecologist, Long Island College and Methodist hospitals; chief and attending in obstetrics and gynecology, Caledonian Hospital; director, Department of Obstetrics, Coney Island Hospital.

Dr. James S. McLester, Birmingham, Alabama.
Professor of medicine, University of Alabama School of Medicine; physician-in-chief, Hillman Hospital.

Dr. Joseph Earle Moore, Baltimore.
Associate in medicine, Johns Hopkins University School of Medicine; physician-in-charge, Syphilis Division, Johns Hopkins Hospital; special consultant, United States Public Health Service and Maryland State Department of Health.

Dr. Maurice C. Pincoffs, Baltimore.
Professor of medicine, Department of Medicine, University of Maryland Medical School.

The registration fee for the Assembly is three dollars. This does *not* include admission to the luncheons or to the dinner, tickets (fifty cents and a dollar, respectively) for which should be bought in advance from headquarters (8 Fenway, Boston). A limited number of tickets for the luncheons and dinner may be purchased on registration at the Assembly; however, as such tickets are necessarily limited, all physicians are urged to obtain and pay for their tickets in advance.

On or about October 1, a folder giving further details and containing an application blank for registration and instructions for obtaining luncheon and dinner tickets will be mailed to every licensed physician in New England. It will greatly aid the committee in charge if these applications are promptly forwarded to the Postgraduate Assembly Committee, 8 Fenway, Boston.

Frank R. Ober, *Chairman,*
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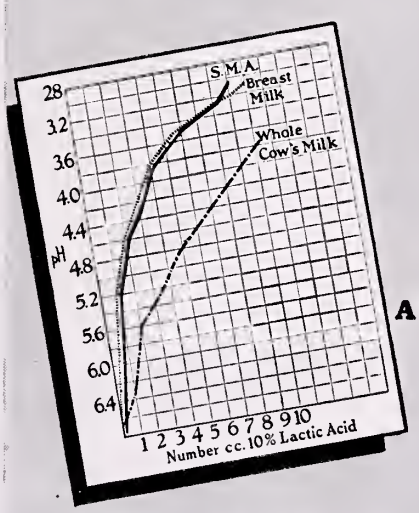
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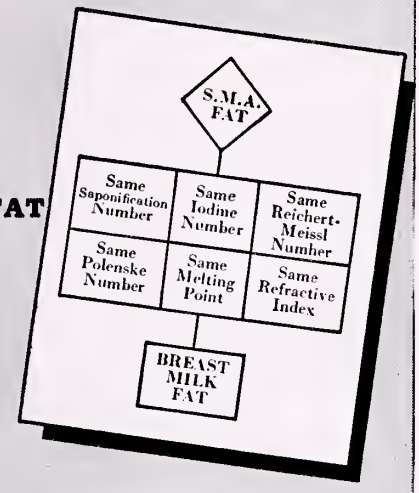
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Fat	3.5-3.6%	3.59
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Ash	0.25-0.30%	0.215-0.226
pH	6.8-7.0	6.97
Δ	0.56-0.61	0.56
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*Frazer, J. G.: The Golden Bough, vol. 1, New York, Macmillan & Co., 1928



It is ironical that the practice of attempting to cure rickets by holding the child in the cleft of an ash tree was associated with the rising of the sun, the light of which we now know is in itself one of Nature's specifics.

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THE RHODE ISLAND MEDICAL JOURNAL

Volume XXII NOVEMBER, 1939 Number 11

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Outline of Roentgen Diagnosis

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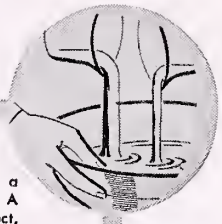
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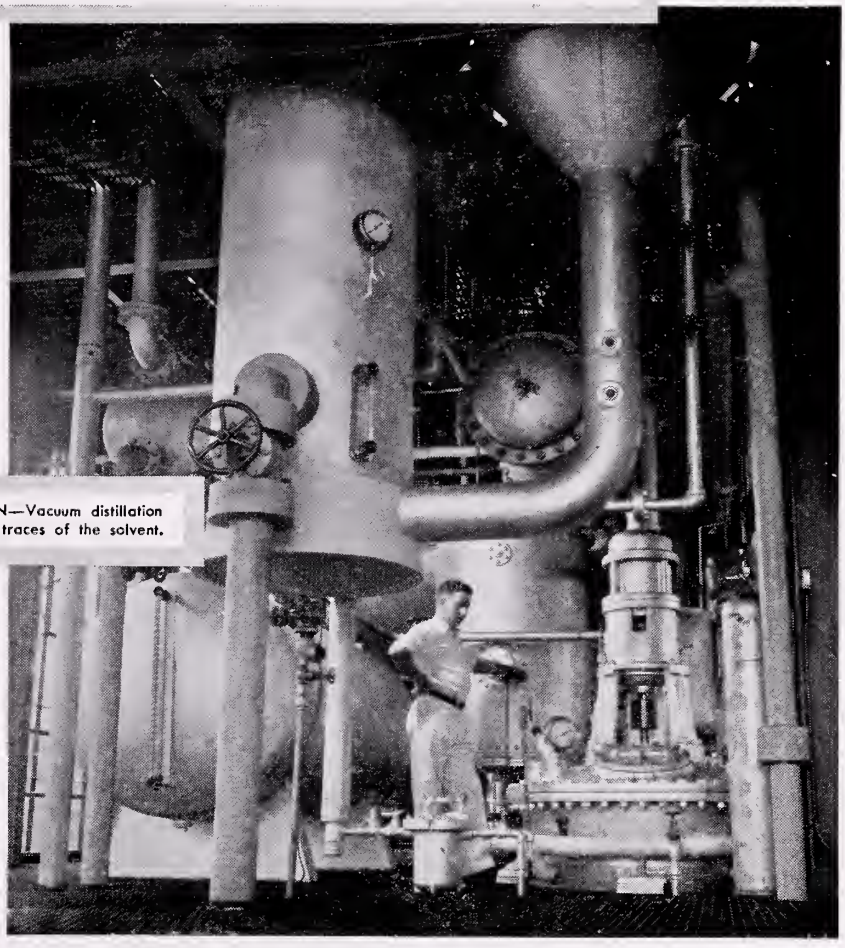
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METHODS FOR QUANTITATIVE ESTIMATION OF THE VITAMINS

II. Determination of Ascorbic Acid

● The first practical method for quantitative estimation of vitamin C in foods was that evolved by Sherman and his associates in 1922 (1).

In this technique selected guinea pigs were confined to a scurvy producing ration supplemented with green succulent vegetables—a source of vitamin C—for a suitable period to demonstrate that the animals were growing at a normal rate. The supplementary feeding of succulent vegetables was discontinued when the animals had attained the proper weight, and the feeding of graded daily doses of the material under assay begun and continued over a 90-day period. At the end of this period, the animals were sacrificed and the degree of protection against pathologic changes characteristic of scurvy provided by the various dosages then was determined by dissection and examination of the organs and tissues. The quantity (daily dose) of the food required to prevent incidence of scurvy symptoms—the protective dose—eventually became known as the "Sherman Unit" for vitamin C, or the "minimum protective dose."

This bioassay technique underwent gradual improvement, both as to the basal ration (2) and as to a numerical system of evaluating and recording the severity of the scurvy symptoms; the so-called "scurvy score" (3). Methods employing shorter assay periods, such as the formal preventive type of assay with a 60-day assay period (4), or a method based upon histologic examination of the teeth (5), as well as curative techniques (6), have been proposed and used for the determination of vitamin C activity of foods. However, today the improved Sherman bioassay technique employing ascorbic acid as a standard of reference and a relatively long assay period is still regarded as the standard method for vitamin C determination (7).

Some six years ago, a chemical method for ascorbic acid estimation was proposed (8, 9) and immediately came into widespread use. Judiciously and circumspectly used, this method has proven a most valuable tool. By acid extraction of a known quantity of food followed by removal of certain proximate food components, ascorbic acid present in the extract may be quantitatively titrated by a standard solution of 2,6-dichlorophenolindophenol. Under proper conditions this reagent is quantitatively reduced by ascorbic acid to a colorless compound. A faint pink color in the acid solution produced by one excess drop of the reagent indicates the completion of the oxidation-reduction titration.

Development of this chemical method has stimulated many researches on the ascorbic acid contents of foods, among them many canned foods (10). Results of investigations by the chemical or bioassay technique (11) reveal that the canned varieties of foods notable for their natural ascorbic acid contents can also be numbered among the most valuable sources of this dietary essential available to the American Consumer.

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(1) 1922. J. Am. Chem. Soc. 44, 165.
(2) 1929. Am. J. Pub. Health 19, 1309.
(3) 1926. A Study of the Thermostability of Vitamin C. C. L. Kenny, Dissertation, Columbia University, New York.
(4) 1930. J. Agr. Research 41, 51.
1931. J. Agr. Research 42, 35.
(5) 1926. Brit. J. Exper. Path. 7, 356.
(6) 1933. Biochem. J. 27, 2006.
1936. Food Research 1, 3.
(7) 1938. J. Am. Med. Assoc. 111, 1290.
(8) 1933. Ztschr. f. Untersuch. d. Lebensmitt. 65, 145.
(9) 1933. J. Biol. Chem. 103, 687.
(10) 1937. U. S. Dept. Agr. Miscellaneous Publication No. 275, 104.
(11) 1922. J. Am. Chem. Soc. 44, 172.
1925. Ind. Eng. Chem. 17, 69.
1926. Ibid 18, 85.
1930. J. Home Econ. 22, 588.
1935. Am. J. Pub. Health 25, 1340.
1938. J. Am. Med. Assoc. 110, 650.
1938. Ibid. 111, 2138.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the fifty-third in a series, which summarize, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



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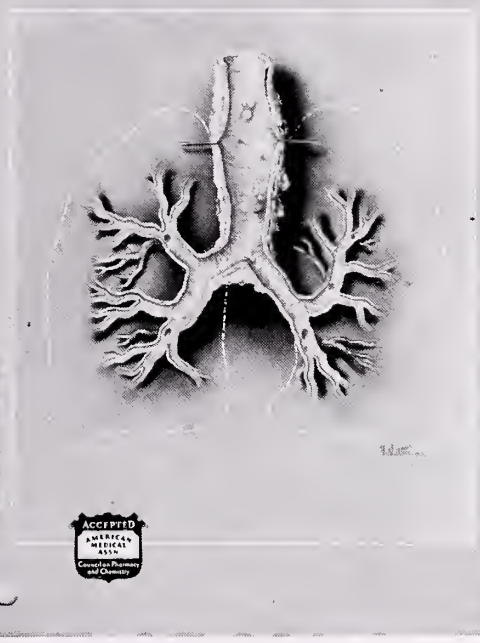
Decongestion of Nasal Mucous Membranes

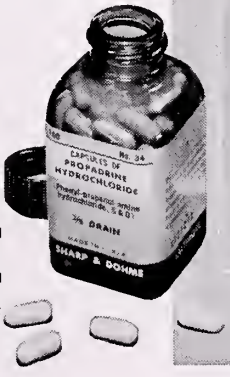
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[1] "Twenty-five years of Health Progress"—Metropolitan Life Insurance Co., 1937; Pages 339-340.

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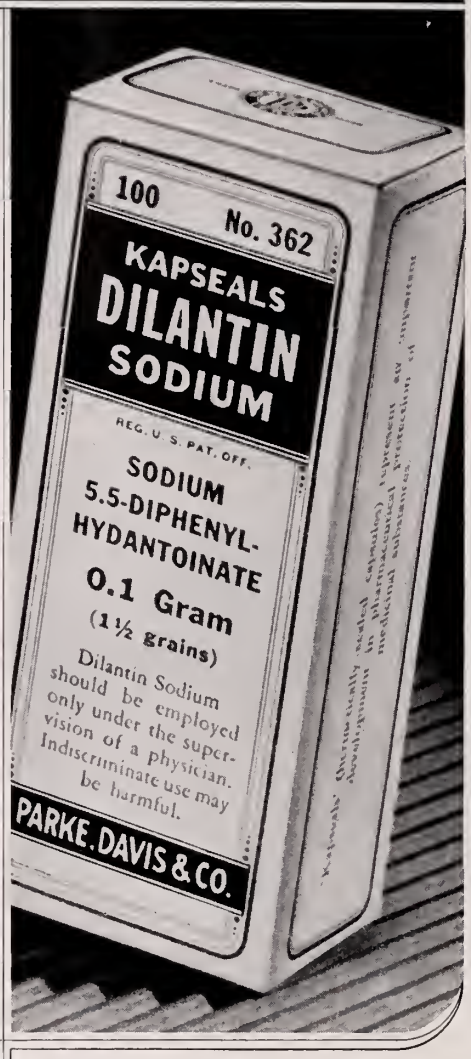
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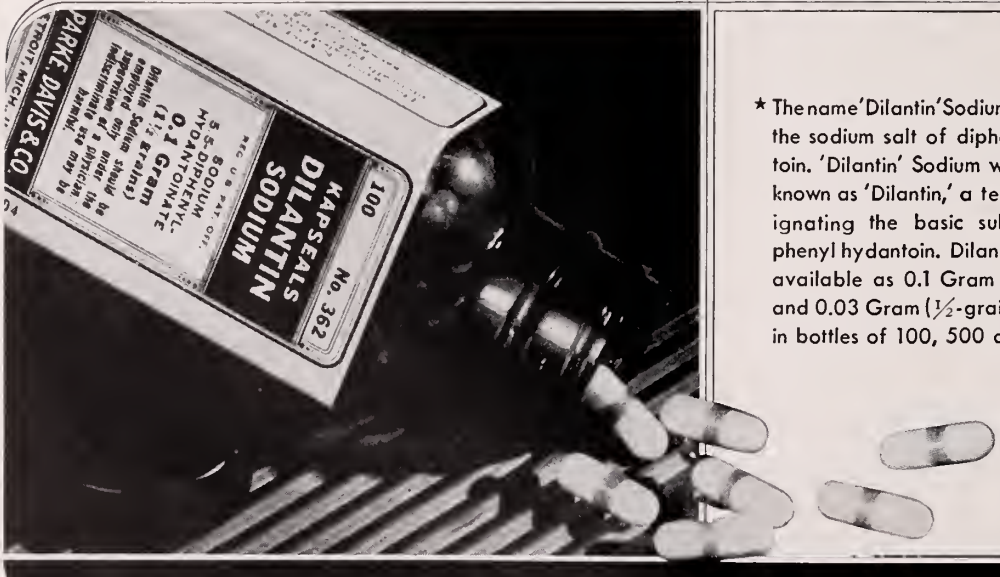
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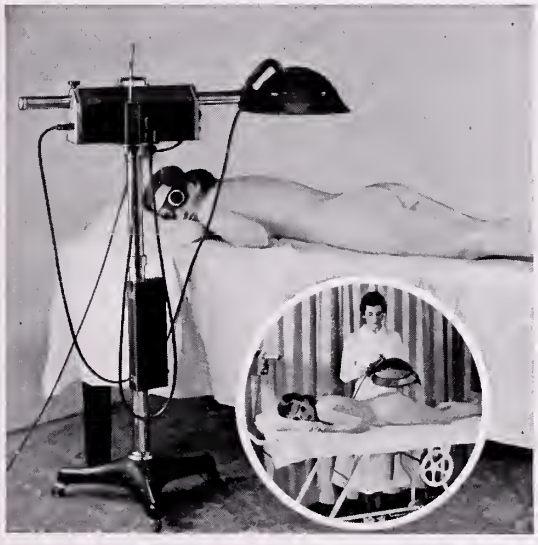
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THE RHODE ISLAND MEDICAL JOURNAL

VOLUME XXII NOVEMBER, 1939 NUMBER 11

OBSTRUCTIVE UROPATHY

ALEXANDER RANDALL, M.D.
1323 MEDICAL ARTS BUILDING, PHILADELPHIA, PA.

Prior to 1925 Urology thought in terms of single-organ pathology and single-organ therapy. We were advancing hurriedly through an era of rapid exploitation of marvelous diagnostic methods and therapeutic measures. The new physiology of renal function, the rapid strides in blood chemistry determinations, the refinements in pyelography, the improved roentgenology and better interpretatation, the unending instrumental developments, and the broadening of the entire field of urologic surgery had been almost breath-taking in the prior two decades. But we still thought in terms of single-organ pathology, and gave but scant attention to related functioning organs. Perhaps one reason for this was the tremendous reserve power to be found through the entire urinary apparatus. Our surgery progressed because this reserve played with us rather than against us. Think of the trabeculated wreck of a bladder wall back of an obstructing prostate. There is little wonder that this gross picture absorbed the minds of the French School, who sought therein to find the cause of the urinary retention. But let us marvel even more how such a tortured organ can come back to happy function again after prostatectomy. Think of the dilatation of the upper urinary tract that frequently occurs during the last months of a pregnancy, and the postpartum return to normal. We have very slowly learned to appreciate this wonderful reserve power, and now know we must never lose sight of it in our preoperative planning and in our postoperative prognosis.

In 1926 the term "Obstructive Uropathy" first appeared in print. Let me quote its definition: "Under this heading are grouped all the changes in the kidney, pelvis, ureter, bladder and urethra resulting from obstruction to the free outflow of urine from the urinary tract."(*Young*) But let us go a little deeper into this definition. It states "all the changes in the kidney, pelvis, ureter, bladder and urethra," again focusing attention upon organ pathology, with, of course, a surgeon's hope to rectify or extirpate.

In 1930 a new era was ushered in by the development of intravenous urogram. I wish to accentuate this term in the hope that it will be more generally adopted. A pyelogram is a picture of a renal pelvis, and by the same token a urogram should be the term by which we mean a picture of the entire system by which urine is transported. And here let us examine the changes that have transpired since this new method of study has been available.

First and foremost, let it be understood that the method depicts urine transportation. Other features of value are present, but for the first time we are now able to visualize the physiological transportation of urine. Note, if you will, the immediate change in perspective, for we leave the attitude of considering the pathologic changes in the organs involved, which result from obstruction, and focus our attention on the dynamics of urinary transportation, which naturally initiate the train of events that follow such a disturbed physiological function.

Let me digress a moment here to raise a point in criticism of a common error in technique. Why insult such a test, let alone a pair of kidneys, by such an artifact as a compression bag? Why create an artificial obstructive uropathy to disturb a brilliant picture-story of renal physiology and urine transportation? Change your patient's position at will, but don't introduce foreign artificialities.

Secondly, urography has forced the urologists to stop thinking in terms of organ pathology and has caused them to read their problems in terms of a system involvement and a system reserve, to think in terms of the whole urinary tract, to analyze the entire physiological disturbance, and to plan corrective surgery from an evaluation of the entire system of urine transportation. Think of this concept and what it means by realizing what has become of the frequency of that passing fad, the ureteral stricture—"gone with the wind" that blew it into our clinics, because now we visualize undisturbed urine transportation.

Professor of Urology, University of Pennsylvania Medical School.

Read at Interne Alumni Clinic Day, at the Memorial Hospital, Pawtucket, R. I., on November 2, 1938.

In dealing with this large subject of Obstructive Uropathy, let me spare you by limiting my remarks to the upper urinary tract only. We know quite well the problems connected with stricture of the urethra, and with the obstructive prostate in its pathological manifestations. We know that from these infravesical obstructions we observe marked functional disturbances in the upper urinary tract and in renal secretory work. If there is not too much disturbance to countermand surgery, the comeback of renal function is often as spectacular as the competence of the postprostatectomy bladder function.

But when the obstruction is supravesical, the anatomic changes in the kidney are then outstanding. It is here sometimes that we see the so-called silent renal pathology develop, all because a compensating mate takes over the essential kidney work by reason of its high reserve power. In these unilateral cases, with the absence of a protective musculature like the bladder to cushion the insult from the pressure caused by an obstruction, the damage seems more rapid and more destructive of renal tissue.

By restricting our study to those clinical cases where the obstructive uropathy is supravesical, we also, by the same token, restrict our subject almost exclusively to ureteral pathology. The physiology of the ureter is not yet thoroughly understood, but the consensus of opinion is that its blood supply, its lymph drainage and probably its neurogenic control are segmental. In this way its function can be properly compared to the intestine, particularly as its essential function is manifest in a periodic peristaltic wave of contracture for the expulsion of its contents, the urine.

Likewise, our subject has to deal solely with an interference in this simple function, the mechanism of the proper transportation of urine. As is usual, the simpler conditions were recognized first. They gave the gross pictures and changes on intravenous urography, which were quickly checked and repeatedly proven at the operating table; and we can dismiss, as being well understood, appreciated and recognized, the role of ureteral calculus, of accidental ureteral ligation, of tuberculosis, of pregnancy, of ptosis, and the great catalogue of congenital anomalies. This is setting aside that group based on primary lesions, wherein there occurs a ureteral failure of function, and with it the results of an obstructive uropathy is secondarily drawn into the clinical complex.

But there is another way in which to look upon ureteral dysfunction, and that is to study it from a physiological point of view and to try to estimate the functional derangement, its clinical recognition and its surgical correction. These are the finer and more elusive clinical problems that we are now trying to recognize in their incipiency and before gross anatomic renal damage occurs, when any one can recognize the ultimate hydronephrotic atrophy, and any surgeon can sacrifice the kidney.

There seem to be two groups that for the moment may be stated and later combined: Those that hamper and reduce renal function, with symptoms, and secondly, those that hamper and reduce renal function, without symptoms. The former go unrecognized through failure of proper interpretation. The latter, unfortunately, fall prey to the inherent sloth of human indifference, which in the physician is evidenced by a faith in pills and prescriptions instead of a bit more time and a physical examination of the abdomen.

We have been guilty of talking of silent renal pathology: is it ever truly silent, or only relatively so? It has been well said, that what is called silent pathology by one medical generation may well be considered clear diagnostic evidence by the next. Advance in diagnosis always proceeds in this fashion. As more and more is known, we learn to include less definite and more distant symptoms in what we like to term the "classical picture" of a disease. (*Pepper*) No, renal pathology is never truly silent; it is only ignorance that makes us deaf to its outcry.

Briefly, let us examine the symptom of pain, as it is frequently the only complaint of the patient.

There are few symptoms in medicine more classical in the consistency of its characteristics or more characteristic in its consistency than an attack of sudden ureteral blockage, such as by stone, so graphically described by Dietl and ever since called a Dietl's crisis. Perhaps it is unfortunate that this picture is so clear in the mind of every practitioner, for I am sure this syndrome has been borne in upon physicians so acutely that some are prone to look upon it as pathognomonic of upper urinary tract pathology or, in its absence, to omit to look further.

In man the sensory nerve distribution from the renal plexus is composed principally of branches from the celiac ganglion which, in turn, receives connections from the vagus and splanchnic nerves and also from the superior mesenteric ganglion

and aortic plexus. Jost was able to demonstrate in the rabbit a definite connection between the abdominal sympathetics and the renal plexus, and this connection was clearly shown in man by the careful anatomic dissections of Hirt. In addition, the splanchnic minor always sends a direct branch to the kidney—the postrenal nerve of Henle. Therefore, it is clear that through the sympathetic system the upper urinary tract enjoys direct nervous contiguity with the nerve centers controlling the gastro-intestinal tract. Such is the interesting and diversified positive field. But there is, as usual, another or negative field, for the renal parenchyma itself contains no sensory nerves, and at operation under local anesthesia the substance of the kidney can be incised without causing pain. Here is the crux of the matter, for lesions involving the parenchyma of the kidney alone cause no pain whatsoever, and only when parenchymal swelling causes capsular tension, or when parenchymal infection spreads to the capsule or the pelvis, can true renal pain arise.

Pain can arise from the pelvis or the ureter only because of irritation of sensory nerves when the pelvis is inflamed or suddenly distended. If pelvic distention is slow, or if inflammation is not sufficiently irritating, there may be no pain, and it is in these gradually acquired pathologic states that there seems to be a decided tendency for sensory symptoms to be referred to a gastro-intestinal distribution, and naturally be given a gastro-intestinal interpretation.

Therefore, in evaluating the symptom of pain in renal disease, bear in mind the following possibilities: First, that pelvic distention by sudden ureteral occlusion causes severe pelvic pain—that sharp, lancinating, intermittent colic, with its characteristic reference along the course of the iliohypogastric and ilio-inguinal nerves, so typically seen in the passage of a calculus. Second, that capsular and pelvic disease, as seen in the subacute infections, causes true kidney pain—a localized, dull, constant loin ache, which is always better after a night's rest. Third, that parenchymal lesions are frequently utterly painless; and here belong the early tumors and parenchymal tuberculosis. Fourth, that the gradually developing pelvic distentions—the hydronephroses, the floating kidneys, the dytopic and anomalous kidneys and those obstructive uropathies secondary to adnexal lesions—are prone to produce a maximum of symptoms referable to the gastro-intestinal system.

It is to this last group that we need to devote our attention today. They are in every clinic in every hospital—the "dyspeptic" of the medical clinic; the "neurasthenic" of the neurological clinic; the gynecologist sees them and administers a tampon; the surgeon gazes despairingly at the multi-scarred abdomen and searches again for "adhesions." I speak sincerely and advisedly, for I have had the privilege of working for the past eight years in a hospital where every chronic abdominal complaint lacking an accurate diagnosis is given the advantage of an intravenous urographic study and a urologic consultation. It will serve no purpose to list cases, but our opportunity to study this group, and our ability, by investigative measures, to reproduce at will renal, ureteral and vesical pain have enabled us to estimate correctly the fundamental cause of complaint in innumerable cases.

The next major symptom too often misused is the urinalysis. Omitting on purpose those evidences of bilateral disease, let me accentuate only briefly the microscopic observation of R.B.C.'s and W.B.C.'s. Hematuria should never be left uninvestigated. We have a teaching slogan that the word hematuria spells cystoscopy. When picked up on a routine examination, it is an unerring evidence of active pathology which should be traced to its source without loss of time. The finding of pus cells in the urine, on the other hand, though of less lethal significance, equally demands an explanation; but let me aid you by suggesting the immediate study of a catheterized specimen in man, woman or child: you will save yourself and others embarrassment in some cases.

Much could be written on the role of infection in obstructive uropathies, but two basic facts must be ever in mind. First, that infection always hastens the anatomic destruction of renal and ureteral function, and creates an additional hazard to surgery and a poorer prognosis for a return to normal. Secondly, that infection is, of itself, almost a proof of persistent obstruction, for the difficulty of experimentally infecting a normal urinary tract is well recognized, and the inability to disinfect is fair prima facie evidence of the lack of normal emptying.

The role of the drugs now available for use as urinary antiseptics is most promising and appealing, and without troubling you with specific details, let me point out a reason for inevitable failure in some cases. Though we be cognizant of the organ-

ism present, and familiar with the drug that is a known specific, there must always be present a third essential factor in combating a renal infection, and that is enough function in the involved kidney to excrete the drug in sufficient concentration to be therapeutically active. Failures that at times are attributed to the inefficiency of a drug, after glowing accounts and remarkable cures have raised expectations, are often due to the absence of the one prime essential to success—that sufficient renal function is present on the diseased side to eliminate the given antiseptic in efficient concentration. Here again a urographic study should give us an answer. One further point is worthy of your attention, because not only is it new, but it is entering a field of medicine that has heretofore seemed far removed from urology. There is a rapidly growing amount of evidence to show that certain cases of so-called essential hypertension are of renal origin. I will not burden you with the accumulating evidence except to cite that for years we have been aware of the hypertension associated with prostatic obstruction, and its marked and permanent decrease following prostatectomy. In addition, there stands out the work of Hinman on experimental hydronephrosis, wherein he showed that the renal atrophy was not a pressure atrophy, but an ischemic atrophy. There then follows the work of Goldblatt on renal artery ligation, to succeed in producing an artificial renal ischemia and experimental hypertension; and now finally there is appearing in the literature the citation of isolated cases, where marked unilateral renal disease has been found in cases of hypertension, and where nephrectomy has been followed by a most sensational fall to relatively normal blood pressure limits. What a fascinating and important field lies before us!

In conclusion, what import does this brief summary on obstructive uropathy carry? It carries a plea that intravenous urography has become a most important step in the investigation of a relatively large group of clinical cases. Its simplicity, its lack of danger or even discomfort and its relative cheapness are strongly contrasted to the marked benefits that may be derived therefrom. But let me voice this one word of warning—that such a study frequently requires the interpretation of one especially interested in the finer details of urologic pathology.

Let me summarize the points that I may be allowed to call important in this paper:

1. That intravenous methods for urologic diagnosis have changed our point of view from terminal pathology in organs to a physiological study of the urinary system and urine transportation.
2. That the physiological transportation of the urine is the basic essential factor to the early understanding of this problem.
3. That the slowly developed and chronic obstructions characteristically give gastrointestinal symptoms, and that every chronic abdominal complaint should receive the advantages of an intravenous urographic study.
4. That red blood cells in the urine demand an explanation.
5. That the treatment of unilateral kidney infections by drugs demands, besides recognition of the organism and choice of the specific drug, sufficient renal function for a therapeutic effect.
6. That we are approaching a realization that certain cases of hypertension have a unilateral renal etiology amenable to surgery.

Conclusions

Thus I have tried to demonstrate the relationship of cause and effect: the role of innocent mild urinary blockage as a fertile soil for developing serious trouble:

(1) The factor that, as in the bladder, so in the kidney, stone is no longer a disease but only a symptom.
(2) Infection comes and tarries when the soil is prepared and attractive.
(3) That anomalies are present in a ratio of one to five; and
(4) That ofttimes we do not think urologically because of the apparent silence so characteristic of renal pathology.

1. The uncomplicated obstructive nephropathies present no laboratory or clinically recognizable sign or symptom that would distinguish them from simple chronic nephritis only detailed urologic and X-ray examinations will disclose the character of an obstructive lesion.
2. Anatomical destructive changes are in direct ratio to the duration and degree of the obstruction—partly offset by personal reserve power.
3. The extent of physiological recovery is in indirect proportion to the duration of the obstruction.
4. Cure is absolutely dependent upon the establishment of free, competent and normal physiological drainage for the urine.
5. Infection changes the picture and greatly accelerates the destructive features.
6. Infection can be cured only when free drainage is accomplished.
7. The greatest danger lies in the loss of time.
8. One should never lose sight of the frequency of anomalies in the urinary tract, and the part they play in soil preparation.

BROMIDE INTOXICATION

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Bromide intoxication is a serious condition which occurs with regrettable frequency in spite of the fact that it is entirely preventable. Eighteen cases of severe intoxication have been encountered in 2,000 consecutive admissions to the psychiatric inpatient service of the New Haven Hospital, with two deaths. It is evident, therefore, that this condition is of considerable clinical importance, and that it needs continued emphasis in medical discussion and publication.

It was in 1927 that Wuth, of the psychiatric service of the Johns Hopkins Hospital, first called the attention of American physicians to bromide intoxication. Since that time series of cases have been reported from all parts of the United States, including a report from Southern New England in 1936. There is no evidence, however, that the incidence is decreasing. It would seem worthwhile, therefore, again to review the situation, and to emphasize the reasons why bromide intoxication occurs as well as to indicate the criteria for diagnosis and the effective method of treatment.

Bromide is one of the most popular sedative drugs and has been used extensively in the symptomatic treatment of nervous and mental illnesses. The bromide salts in various combinations are the active agents in numerous widely advertised proprietary preparations, some of which are marketed under misleading names with exaggerated claims for their therapeutic usefulness. The sale of bromide is unrestricted, a physician's prescription is not necessary. The pharmacologic action of bromide is poorly understood by many physicians. The danger of intoxication is not generally appreciated. Methods of diagnosis and treatment of intoxication have not been given sufficient emphasis in clinical teaching. The indications and contraindications for the therapeutic use of bromide are not clearly defined in textbooks of medicine.

The sedative action of bromide depends upon its depressing effect upon the central nervous system. Undesirable side effects are uncommon but nausea and acneform skin eruptions sometimes are observed. Bromide is readily absorbed from the stomach when given by mouth and appears in the urine within a few minutes after ingestion. The elimination of the drug from the body proceeds slowly, however. Bromide tends to displace chloride in the blood and other body fluids where it may accumulate to such an extent that a state of intoxication is produced. The chloride which is displaced is excreted by the kidneys in preference to bromide. The interchange of chloride and bromide apparently involves equilibrium reactions since the administration of large amounts of chloride accelerates the elimination of bromide. It follows that the danger of intoxication is diminished by a generous chloride intake and that it is exaggerated in states of malnutrition and dehydration in which the intake of fluids and chloride may be limited or the stores of these substances in the body depleted. Impairment of renal function in nephritic and arteriosclerotic conditions may also enhance the risk of intoxication.

If the accumulation of bromide in the blood continues, definite intoxication develops. The early symptoms of bromide intoxication are an exaggeration of the therapeutic sedative effect. Retardation of thought, speech and action appears, together with anorexia, constipation and drowsiness. This stage of intoxication seldom is dangerous if it is recognized; the symptoms clear up gradually when the administration of bromide is discontinued. If this is not done, however, and the drug continues to accumulate, outspoken mental disturbance, which may cause serious difficulty, frequently occurs. Drowsiness and lethargy may progress to stupor or may be replaced by insomnia and irritable restlessness. The patient refuses food and fluids and may become severely dehydrated. Dry mucous membranes, furred tongue, foul breath, dilated pupils, ataxia and tremulousness are typical. Delirious manifestations appear.

Clouding of consciousness is the basic disturbance in delirium. This is manifested symptomatically by disorientation for time, place or person, misidentification and misinterpretation of familiar people and situations, failure of comprehension, especially of familiar routine material, and disturbance of memory especially for recent events. The clouding characteristically fluctuates and is fre-

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Read before the Rhode Island Society for Neurology and Psychiatry, Providence, April 10, 1939.

quently worse at night. The patient may be quite clear at one time and markedly confused a few hours later. Clouding is directly dependent upon crude organic disturbance of cerebral functioning. The patient usually responds with fear to his hazy, unfamiliar and therefore threatening environment which is poorly comprehended in a dreamlike way. Vivid, terrifying illusory and hallucinatory experiences often occur involving especially the visual perceptive sphere. The patient may respond with panic and paranoid projection. The body-image may become distorted so that the delirious patient is unclear even about himself. Vestibular disturbance is frequent, with dizziness and sensation of rhythmic movement often misinterpreted by the patient is indicating that he is on a boat or an airplane. The "boat-theme" occurs exceedingly frequently in delirium and is practically pathognomonic of that condition.

In some cases, for reasons which are not entirely understood, skin lesions occur. The eruption is usually pustular acneform in type, indistinguishable in appearance and distribution from acne vulgaris. The cutaneous eruption usually appears only after prolonged administration of bromide, thus differing from the exanthems of drug idiosyncrasy. Severe skin eruptions may occur in the absence of mental disturbance, while the skin may be normal in the presence of delirium or coma. This point demands emphasis because some physicians prefer to wait for the appearance of a skin eruption before making a diagnosis of bromide intoxication. Dependence upon the bromide eruption as a diagnostic aid is one of the chief reasons why delirium and coma with bromide intoxication pass unrecognized.

The existence of bromide intoxication is suggested, therefore, by mental or dermatologic symptoms which may be found alone or in combination.

The diagnosis of bromide intoxication presents certain difficulties. Most patients have been suffering from some nervous or mental illness which manifests its own symptoms, so that if a bromide delirium is superimposed, a very complicated psychiatric picture is produced. If the characteristic symptoms of delirium are recognized, the diagnosis can readily be made, for clouding of consciousness cannot be attributed to a preëxisting mild personality disturbance or so-called "functional psychosis." If the bromide was given to allay the symptoms of a delirium due to some condition such as cerebral arteriosclerosis or an infectious disease, then the symptoms of the bromide intoxication will be indistinguishable from those of the original illness. Even in such cases, however, the presence of bromide intoxication may be suspected if there is a sudden exacerbation of mental disturbance which is not accounted for by a change in the course of the original somatic disease.

The skin lesions produced by bromide are not specific, but are of some diagnostic importance if a history of the administration of sedatives can be obtained, particularly if the eruption is associated with delirium.

A definite diagnosis of bromide intoxication can be made only by the identification of bromide in toxic quantity in the blood. The test for bromide may readily be carried out in the physician's office. Either whole blood or serum may be used, serum yielding somewhat lower readings. The blood protein is precipitated by trichloroacetic acid, the mixture is filtered and gold chloride added to the clear filtrate. A reddish brown color develops if bromide is present. The mixture is then compared to a standard in a colorimeter or comparometer.* A blood bromide level of 250 mgs.% or higher will account for a delirium in a patient who is in fairly good physical condition. Stated in another way, severe intoxication will usually be produced by a displacement of more than 30% of the blood chloride by bromide. The intoxication is due to the presence of bromide, however, not to the deficiency in chloride.

The treatment of bromide intoxication consists of general supportive measures plus the administration of chloride to eliminate bromide from the tissues. Good nursing care is essential.

Since the patient is usually in a malnourished or dehydrated condition, steps should be taken to insure an adequate intake of food and fluid. A high caloric soft diet rich in vitamins should be given and a minimum of 3000 cc. of fluid a day. Gavage feeding frequently is necessary. Repeated enemas should be given to combat the intestinal sluggishness.

Approximately ten grams of sodium chloride (in capsules) should be given each day in addition to the salt contained in the ordinary diet. Except in emergency, parenteral saline is contraindicated since the rapid elimination of bromide may injure the kidneys.

*Manufactured by The LaMotte Chemical Co., Baltimore, Md.

Chemical sedation is contraindicated and usually ineffective, although drugs are occasionally required to control extreme excitement and noisiness. Continuous tubs and cold wet sheet packs are the best sedative measures available in the management of delirium.

Severe intoxication will usually be controlled by these methods in less than three weeks.

Illustrative Cases:

A 63-year-old widowed housewife had complained for five years of attacks of precordial pain radiating to the left arm, sometimes associated with dyspnea and pulmonary edema. During the past two years these attacks had become more frequent and the patient had become more garrulous, circumstantial and irritable. A diagnosis of general, cerebral and coronary arteriosclerosis was made and a diet low in fluid and chloride ordered. Three months later, after an anginal attack, bromide was prescribed, the patient taking 80 grains a day. After two weeks she became confused, disoriented and hallucinated.

On admission to the psychiatric service the vital signs were normal. She was obviously dehydrated. There was a slight acneform rash on the back. A typical delirium was present, with fluctuation of consciousness. The patient believed she was in a distant city in this country and again that she was in Norway. There were vivid visual and auditory hallucinations: she saw faces in the room, heard her son calling, saw children being murdered. She was extremely frightened and excited. The serum bromide was 300 mgm.%.

She was digitalized, fluids were forced, continuous tubs were used as a sedative, and she was given eight grams of sodium chloride a day in addition to a nutritious unrestricted soft diet. In two weeks the serum bromide fell to 50 mgm.%, the delirium cleared, her general condition improved and she was discharged on a maintenance dose of digitalis.

In this case bromide had been given in an attempt to control anginal pain to an arteriosclerotic patient who was already on a restricted fluid and chloride intake. Severe intoxication quickly developed.

2. A 35-year-old chronically alcoholic married factory worker fell downstairs while intoxicated sustaining a cerebral concussion and losing consciousness for two hours. He had been eating well previously. He was admitted to a surgical service, where a deviation of the right eyeball and bloody cerebrospinal fluid were found. Within a week the cerebrospinal fluid became clear and the neurologic condition negative. X-ray revealed no fracture. He partially regained consciousness two hours after admission to the hospital but was excited and had to be restrained. Paraldehyde was administered. His delirium did not subside, and a vicious circle was quickly established. For three months the patient was kept in restraint almost continuously while large quantities of paraldehyde, barbiturates, bromide and whiskey were given in an attempt to quiet his delirious excitement. Food and fluids were refused, an inflammatory lesion appeared on the chin and the patient's condition gradually became worse. A consultant advised his transfer to a psychiatric service.

On admission the vital signs were normal. Dehydration was extreme. There was no skin eruption. There was a granulomatous lesion on the chin. The edges of the tongue were smooth and red and the muscles of the thigh and calf were somewhat wasted. The neurologic examination was essentially negative. A typical delirium was present, with fluctuation of consciousness. He thought he was in Sweden and talked much of boats and airplanes. Visual hallucinations were present of a terrifying nature, machines were coming through the window to seize him. Memory was grossly impaired and he confabulated freely. Serum bromide was 300 mgm.%

He was placed on a mattress on the floor. Cold wet sheet packs and continuous tubs were used as sedatives. Fluids were forced by gavage, a high caloric liquid diet was given, plus betaxin, dilute liver extract and nicotinic acid intramuscularly. Ten grams of sodium chloride were administered daily. Antiseptic care was given to the lesion on the chin.

Marked improvement was apparent within 48 hours. After two weeks the serum bromide was 100 mgm.% and the patient was happily attending occupational therapy classes. He was discharged three weeks after admission in normal health.

In this case sedative drugs, chiefly bromide, were used in an attempt to control a posttraumatic delirium. Simultaneously the patient was allowed to become dehydrated and avitaminotic. A vicious circle was established, and after three months the patient's life was in jeopardy. A satisfactory result

was obtained in two weeks by the use of simple supportive and nursing measures plus specific treatment of the bromide intoxication and avitaminosis.

Bromide should rarely be used in medical practice and never without the continuous supervision of a physician. The drug should not be given for more than a few days at a time unless the blood bromide level is controlled. The administration of bromide is clearly indicated only in the treatment of epileptic patients when phenobarbital and dilantin in adequate dosage have failed to control the seizures. The addition of bromide will sometimes then be helpful. Psychologic treatment, not drugs, is indicated in mild tensional conditions and insomnia. If drugs must be used temporarily, barbiturates are more effective than bromide. Bromide has no place in the treatment of depression. Paraldehyde is to be preferred to bromide in the treatment of severe excitement since bromide is ineffective unless dangerously large doses are given. Bromide should be used with caution in cases of arteriosclerosis since delirium is readily produced if cerebral arteriosclerosis is present. Nephritis is a definite contraindication to the use of the drug. Bromide should not be used in cases of dehydration or severe malnutrition in which the body fluids and chlorides are low. Deficient diet and dehydration play a major role in the development of bromide intoxication. Finally, the patient should be warned against the purchase of bromide in a drugstore without a prescription and a prescription for bromide should be marked "not to be refilled."

Summary

1. Bromide intoxication is a serious but preventable condition.

2. Bromide intoxication is manifested by psychiatric or dermatologic symptoms which may occur alone or together. The diagnosis is confirmed by the demonstration of a toxic concentration of bromide in the blood.

3. The tendency of bromide to displace chloride and to accumulate in the tissues is the decisive factor in the production of intoxication.

4. Dehydration and dietary deficiency are important contributing factors.

5. Treatment of the intoxication depends on the administration of adequate amounts of fluids and chloride.

6. Bromide should be used less frequently in medical practice, and only under continuous medical supervision.

7. The sale of bromide without a physician's prescription should be prohibited.



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SURGERY IN PATIENTS WITH HEART DISEASE

The accurate pre-operative estimation of how much or how little surgery a given patient with heart disease is likely to survive is obviously of considerable importance to the patient and to all those concerned with his care. This is particularly true in considering surgery which is optional or which may be temporarily delayed if need be. When the nature of the surgical condition is such that operation cannot be delayed, the general condition of the patient must be accepted as it is, whether it be good or bad. Many of the patients with well defined organic heart lesions withstand the strain of anesthesia and operation surprisingly well.

Butler, Feeney, and Levine, in 1930, discussed the question—What added risk does a given heart lesion present to a contemplated operation? Four hundred and fourteen patients with heart disease who underwent four hundred and ninety-four operations were studied. The total mortality was 13 per cent. There were one hundred and forty-seven operations on patients with valvular heart disease with a mortality of 2.1 per cent. One hun-

dred operations on patients with auricular fibrillation carried a 3 per cent mortality. Forty-one operations on patients with coronary thrombosis resulted in a mortality of 44 per cent. Most of these deaths occurred in patients with recent coronary thrombosis. Thirteen operations on patients with syphilitic aortitis resulted in a mortality of 9.1 per cent. Six operations on patients with paroxysmal tachycardia carried no mortality. Fifty operations on patients with congestive heart failure resulted in a mortality of 17 per cent. Four hundred and thirty-three operations on patients with heart disease without nephritis carried a mortality of 4.9 per cent while sixty-one operations on cardiacs with nephritis showed a mortality of 14 per cent.

From the literature and from personal experience there are a few general conclusions which seem to be adequately supported. A skilled anesthetist who can successfully avoid struggling and anoxemia will reduce the strain of operation in cardiac patients to a negligible quantity. Shock lasting more than a few minutes during operation is a very serious occurrence. Uncomplicated hypertension adds very little to the risk of operation. Hypertension complicated by nephritis adds very significantly to the operative mortality. Unexpected death on the operating table is more apt to occur in young people without heart disease than in old people with it. Compensated rheumatic heart disease adds only minimally to the operative risk. Patients having a materially increased operative risk are those with congestive failure, with syphilitic aortitis, with aortic stenosis and with evidence of advanced coronary artery disease. This latter group includes patients with angina pectoris, with complete heart block first appearing late in life, with bundle branch block, or, most important, with recent coronary thrombosis.

As a general rule, with the exception of syphilitic aortic regurgitation, a heart will survive anesthesia and operation if it produces no symptoms in carrying out the demands made upon it in ordinary life. It is generally agreed that spinal anesthesia is inadvisable in patients with significant hypertension. Many qualified commentators agree that skill and care in administration are more important than the choice of the anesthetic in patients with heart disease.

Butler, S., Feeney, N., and Levine, S. A.: The Patient with Heart Disease as a Surgical Risk, J. A. M. A. 98:2, 85 (July 12) 1930.

RHODE ISLAND MEDICAL SOCIETY

Council

The meeting of the Council of the Rhode Island Medical Society was called to order by the President, Dr. Charles H. Holt, at 4:10 P. M., Thursday, September 21, 1939, at the Medical Library. The minutes of the last meeting of the Council were read and approved. Dr. Jesse E. Mowry reported as Treasurer, and it was voted that the resignation of Dr. Elizabeth H. Sumberg be accepted.

It was voted that the following be placed on the retired list:

Dr. Elisha D. Clarke
Dr. Henry J. Hoye
Dr. Florian A. Ruest
Dr. M. J. O'Neil

Dr. G. S. Gordon was dropped for non-payment of dues.

A complaint of Dr. Joseph E. Raia that Dr. Herman Grossman had permitted publicity in the newspapers regarding a case on the Eye Service at the Rhode Island Hospital, was referred to the Grievance Committee.

The resignation of Dr. Frank B. Cutts from the Committee on Education was accepted.

A letter was received from Alice Jaynes Tyler protesting office charges made in the treatment of her son, and the letter was referred to the Secretary for answer because of the lack of jurisdiction of the Council.

Voted that the circular letter Dr. Harry C. Messinger sent to the members of the Providence Medical Association be published in the Rhode Island Medical Journal.

Voted that the award of the Federal Government of $9,000.00 for serum to be used in pneumonia cases be approved.

Adjourned at 4:45 P. M.

Respectfully submitted,
Roland Hammond, M.D.,
Secretary pro tem.

House of Delegates

The House of Delegates of the Rhode Island Medical Society was called to order by the President, Dr. Charles H. Holt, at 5:00 P. M., Thursday, September 21, 1939.

Mr. Parker, representing the Blue Network of the National Broadcasting Company, and representing station WEAN in Providence, spoke by invitation, on the subject of blood banks and volunteer donors. He stated that the Blood Donors League was now functioning in several cities throughout the country and requested an opinion from the House of Delegates as to the desirability of such a League in this vicinity. Dr. Jesse P. Eddy, 3rd, in discussion stated that there was a need for voluntary blood donors. It was voted that a Committee of three be appointed to co-operate with Dr. Eddy in the formation of a Blood Donors League in Rhode Island.

The minutes of the previous meeting of the House of Delegates were read and approved and the minutes of the Council of even date were read and approved.

It was voted that the Rhode Island Medical Society endorse the work of the Providence League for the Hard of Hearing, Inc., and the Secretary was instructed to write a letter to the Secretary of the League to that effect.

Voted that Dr. Alex M. Burgess be appointed a Committee of one to confer with Senator Theodore Francis Green, urging him to support a congressional appropriation for the Army Medical Library and Museum in Washington.

The report of the Delegate to the House of Delegates of the American Medical Association was read and placed on file.

Dr. J. P. Deery, by invitation, discussed the question of reporting occupational diseases as required by the Rhode Island law of 1915, and submitted a sample report card, which had been simplified from those previously used. A petition for consideration and action by the House of Delegates of the Rhode Island Medical Society was presented, asking for the approval of the Rhode Island Medical Society, and co-operation with the Department of Health, in carrying out this law.

Voted that the House of Delegates approve the action of the Department of Health in sending out a circular letter to each practitioner in the State requesting co-operation in reporting occupational diseases.

Dr. Francis V. Corrigan, by invitation, discussed the question of giving information regarding private infectious cases in children to the family physician and the public health nurses. The question was discussed by Drs. Henry Streker and Helfrich, and it was voted to lay the matter on the table until the next meeting and in the meantime the District Societies were requested to discuss this matter at their meetings and report their disposition of this matter to the Secretary of the Rhode Island Medical Society.

Adjourned at 6:10 P. M.

Respectfully submitted,

ROLAND HAMMOND, M.D.,

Secretary pro tem.

Reporting Occupational Disease

(General Laws, 1938, Ch. 255, Sec. 18 to 21.)

Sec. 18. Every physician in this state attending on or called in to visit a patient whom he believes to be suffering from poisoning from lead, phosphorus, arsenic, brass, wood-alcohol, mercury or their compounds, or from anthrax, or from compressed-air illness, or any other ailment or disease, contracted as a result of the nature of the patient's employment, shall within forty-eight hours of such attendance send to the State Department of Health a report stating:

(a) Name, address and occupation of patient.
(b) Name, address and business of employer.
(c) Nature of disease.
(d) Such other information as may be reasonably required by the State Department of Health.

The reports herein required shall be on or in conformity with the standard schedule blanks hereinafter provided for. The posting of the report, within the time required, in a stamped envelope addressed to the office of the Director of Health, shall be a compliance with this section.

Sec. 19. The Director of Health shall prepare and furnish, free of cost to the physicians included in Section 18, standard schedule blanks for the reports required under said section. The form and contents of such blanks shall be determined by the Director of Health.

Sec. 20. Reports made under Sections 18 and 19 of this chapter shall not be evidence of the facts therein stated in any action arising out of the disease therein reported.

Sec. 21. It shall furthermore be the duty of the Director of Health to transmit a copy of all such reports of occupational disease to the Chief Factory Inspector.

PETITION

Whereas, The Department of Health of the State of Rhode Island and Providence Plantations, is eager to maintain the good-will and co-operation of the official agencies of the medical profession within the confines of its jurisdiction, and

Whereas, The statutes of this State have demanded, since the year 1915, that every physician report his attendance on a patient suffering an occupational disease, to the Department of Health. It has been observed by this Department that the said law has not been complied with to its full extent, since its enactment. Realizing the value of such reports in carrying on the work of this agency, and especially its Industrial Hygiene program, we hereby

Petition the Rhode Island Medical Society, through its House of Delegates, assembled in regular session, to give sign of their approval and co-operation with the Department of Health, in its efforts to perform this function imposed on it by law.

Respectfully submitted by,
J. P. DEERY, M.D.,
Industrial Hygienist

With the approval of
LESTER A. ROUND, PH.D.
Director of Health.
September 21, 1939.

Action of Rhode Island Division of Child Hygiene

In 1936 the Division of Child Hygiene of the R. I. Department of Health inaugurated a Tuberculin Skin Testing Program in the high schools throughout the State with the understanding that the information from these tests be confidential between the Health Department and the family physician. This program was approved by the State Medical Society at that time.

There are public health nurses acting as family teachers and carrying on a tuberculosis program who would assist in directing families to their private physicians for reports of X-ray findings of positive cases, and we have come to feel that this program would become more effectual if the information might be given to them.

It is therefore suggested that the policy of the Rhode Island Medical Society and the R. I. Department of Health be modified to permit the latter to co-operate with these nursing groups in the following manner: 1. That the list of names and addresses of all children who have been skin tested, and the results, shall be sent to both the family physicians and the public health nurses. 2. That the reports of all X-ray findings shall also be sent to them.

It is distinctly understood that the tuberculosis nurse shall first contact the family physician and proceed with her case-finding program under his direction, and also that this information be kept confidential by all public health nursing agencies.

It shall be understood that the nurses already carrying the responsibility for tuberculosis nursing in the community shall be responsible for the following up of this information to secure for the community maximum benefit in protection against tuberculosis.

Report of the Trustees of the Fiske Fund

Trustees: Edward S. Brackett, M.D., Charles H. Holt, M.D., Lucius C. Kingman, M.D.

Secretary of the Trustees: Wilfred Pickles, M.D.

June 5, 1939—First Meeting of the Year.

The meting was held at Dr. Pickles' office and was attended by Drs. Brackett, Holt and Pickles. Several essays were submitted in the current competition on the subject: "Cesarian Section—Indications and Contra-indications for the Various Types of Operation." In the announcement of the contest last year the Trustees stated "They wish to emphasize that, in the present contest, essays should show that the author has performed the various types of operation and speaks from his own experience as well as from a careful review of the literature." The essays submitted were considered with great care, and, while several of them were excellent compilations of current opinion on the subject, and as such were well worthy of publication, none met the requirements as stated above. It was accordingly voted that no award be made.

When Dr. Caleb Fiske established the fund which bears his name, it was his expressed desire to stimulate original observation of disease by the members of the Rhode Island Medical Society. The Trustees are enedavoring to carry out that wish and are much concerned that for several years it has been impossible to award a prize. They accordingly voted that a prize of two hundred and fifty dollars be offered for an original essay to be sub-

mitted before May 1, 1940, on the subject, "Fracture of the Femur—Methods of Treatment and End Results—as Based on Personal Observation or Hospital Records." It is their hope that this contest will be productive of many dissertations and that they will be able to make an award.

It was voted that the emolument of the Trustees be given to the Medical Library for the catalogue fund.

The Secretary was directed to pay for the care of Dr. Fiske's grave, as in past years.

The usual financial report was submitted and was accepted by the Trustees.

Respectfully submitted,

Wilfred Pickles, M.D., *Secretary*

Report of the Delegate to the American Medical Association

The convention of the American Medical Association was held in St. Louis, May 15-19, 1939. The St. Louis County Medical Association deserves a great deal of credit for the efficient manner in which the convention was conducted and also for hospitality.

The members of the House of Delegates were given a dinner the first evening of the convention and that was followed by a puppet show. Certain easily recognized characters, Dr. Sharkbein and Dr. Going West, were sentenced to long terms in the doghouse by the testimony of an economic royalist, P. Fuller Bloat; a labor racketeer, Michael Skullbuster; a cult promoter, Dr. DeJerker and several others of like character. Doctors Sharkbein and Going West were finally rescued by Aesculapius.

The scientific division of the convention, including the exhibition and scientific papers, was of the same caliber of former years. Each year one notes a closer relation between papers and exhibits. One often heard expressed a desire for a day or two more of time, a matter which could well receive further consideration.

The transactions of the House of Delegates have been reported in detail in the *Journal of the American Medical Association* for the weeks of May 27 and June 3, 1939. They are very instructive and well worth your careful attention. Here, only parts may be quoted.

After reviewing the past year of the controversy between the Government and the American Medical Association, Dr. Irvin Abell said "The fundamental point at issue in the indictment of the American Medical Association is as to where the power of policing professional organizations shall lie. Heretofore by common consent this power has been vested in the organizations themselves, which have established standards of qualification, training, attainment, character and conduct for those desiring to enter their ranks and for the members desiring to remain in their ranks. This power has been exercised in good faith and with good intent for the protection of the public. Should a conviction be obtained and upheld by the appellate courts, the policing power would be transferred to the federal government, which would then determine qualifications for membership, articles of expulsion, and the like. While this legislation was primarily aimed at the American Medical Association, it is apparent that many other organizations, professional and business, have an interest in it, since that which applies to one will apply to all."

Dr. Rock Sleyster, President-elect, urged members to take a more personal view of the American Medical Association, stating that 535 North Dearborn Street is not the Association but a building. We, the members, individuals, are the Association and indictment of the Association is an indictment of ourselves.

Dr. Sleyster also cautioned members against expressing private opinions that may be mistaken for those of the profession as a whole.

For the past few years, the social and economic aspects of medical practice have been the chief concern of organized medicine and this year has been no exception. Several State societies have passed resolutions opposing the Wagner Act. Some of these were presented to the House of Delegates of the American Medical Association.

A committee composed of Doctors Walter F. Donaldson, Frederic E. Sondern, Walter E. Vest, Fred W. Rankin, E. H. Cary, Henry A. Luce, and Howard L. Snyder was appointed to consider the Wagner National Health Bill. Their report in the June 3, 1939, issue of the *Journal of theA merican Medical Association*, page 2295, should be read by everyone and I strongly urge you to do so for I believe it to be one of the most important pronouncements made by the American Medical Association.

The Committee sat for hearings both during days and long hours of the nights. The conclusions were not hastily drawn. Obviously, I can give you but a few:

1. The House of Delegates cannot approve the methods by which the objectives of the National Health Program are to be obtained.

2. The Wagner Health Bill does not safeguard in any way the continued existence of the private practitioners who have always brought to the people the benefits of scientific research and treatment.

3. This bill proposes to make federal aid for medical care the rule rather than the exception.

4. The Wagner Health Bill does not recognize the need for suitable food, sanitary housing and the improvement of other environmental conditions necessary to the continuous prevention of disease.

5. The Wagner Health Bill insidiously promotes the development of a complete system of tax supported governmental medical care.

6. The Wagner Health Bill provides for supreme federal control; federal agents are given authority to disapprove plans proposed by the individual states.

The report of the Committee on Medical Care is also one that should receive your earnest consideration. It is printed in the *Journal of the American Medical Association*, in the issue of May 27, 1939, page 2177, and signed by Dr. William F. Braasch of the Mayo Clinic. A brief quotation here is interesting: "Fully 90 per cent of all the sources consulted reported that they knew of no significant number of persons needing and seeking medical care who were unable to obtain it. Nurses, health departments, relief and welfare workers, school and university authorities, industrial and mutual organizations and pharmacists were all asked how many, if any, persons of whom they had knowledge had been unable to obtain needed medical care. . . . The overwhelming majority of opinions from all sources agree that forty thousand and not forty million persons in the United States are denied needed medical service."

The House adopted a resolution asking Congress to provide funds for the Army Medical Library and Museum.

A resolution recommending that films of a medical nature for the laity be approved by state or county medical societies was adopted.

The Distinguished Service Award was given Dr. James B. Herrick of Chicago for his contributions to the knowledge of coronary occlusion.

Dr. Olin West reported the membership of the Association to be 113,113; the Fellowship, 70,100, both substantial increases.

The following were elected to office: President, Rock Sleyster, M.D.; President-elect, N. B. Van Etten, M.D.; Treasurer, H. L. Kretschmer, M.D.; Speaker of the House, H. H. Shoulder, M.D.; Vice-Speaker, R. W. Fouts, M.D.; Trustees, Roger Lee, M.D., and E. L. Henderson, M.D.

The next convention will be held in New York City June 10-14, 1940.

Respectfully submitted,

GUY W. WELLS, M.D.

RHODE ISLAND HOSPITAL

Dr. William O. Rice, efficient superintendent of the Rhode Island Hospital for the past five years, has resigned his position, the resignation effective on January 1, 1940. Dr. Dennett L. Richardson, present superintendent of the Charles V. Chapin Hospital, will succeed Dr. Rice at the Rhode Island Hospital.

On June 19, Dr. G. Edward Crane and Miss Lillian Peterson were married. Dr. and Mrs. Crane are residing at 129 Nelson St., City.

On Sept. 15, Dr. Thomas Dring of Newport, R. I., began a two-year internship. Dr. Dring is a graduate of Rhode Island State College and Cornell Medical School.

On August 15, Dr. Heber Johnson began a two-year internship. Dr. Johnson's home is in Ironton, Ohio. He graduated from Ohio University in Athens, Ohio, and Harvard Medical School.

On Oct. 1, after two years internship, Dr. Robert Chace left for his home on Wayland Ave. On January 1, 1940, he expects to take an internship in Presbyterian Hospital, New York City, doing eye work.

Dr. Palmer Congdon, who became Resident House Physician on July 1, resigned from that position in September in order to take up work in Alaska. He is to be a Tuberculosis Clinician, and will travel throughout the territory lecturing and holding clinics. Dr. Congdon will be a member of the Staff of the Territorial Department of Health. The Commissioner of Health is a Doctor Council. Dr. Congdon will be on his Staff with headquarters at Juneau. He sailed from Seattle, Washington, October 7, on the S. S. Alaska for Juneau.

RECENT BOOKS

Principles of Chemistry, An Introductory Textbook of Inorganic, Organic, and Physiological Chemistry for Nurses and Students of Home Economics and Applied Chemistry, With Laboratory Experiments. By Joseph H. Roe, Ph.D. Fifth Edition, pp. 503, with 53 illustrations in the text and 5 plates. Cloth, $3.00. The C. V. Mosby Company, St. Louis, 1939.

The new fifth edition of this textbook differs from former editions in several respects. One change which should enable nursing schools to follow easier the recommendations of the new curriculum as outlined by the National League of Nursing Education is the addition of material on organic chemistry. The survey of organic chemistry seems to be a good one from the viewpoint of the chemistry teacher in the nursing school.

Applications to clinical conditions and to nursing are stressed throughout the text and the portion given over to physiological chemistry is especially well applied to pathological conditions in medicine.

It is the opinion of the reviewer that the text will be applicable in nursing schools where a good foundation of general chemistry is a requirement for entrance. In those schools which give the first chemistry that the student receives, the text would be difficult, or if used, the students would require considerable help in order to understand it.

The reviewer also questions the advisability of giving so much space to the listing of materials for laboratory experiments and to a description of the experiment. It often seems best to work out the experiments according to the instructors' own ideas and including materials that can be supplied in that particular school for laboratory equipment.

The reviewer feels that the questions and fill-in forms which have been added in this addition are well chosen and would be very helpful.

Mary G. Sanders, B.A., R.N.

Outline of Roentgen Diagnosis by Leo G. Rigler, M.D. 212 Pages. Additional "Pictorial Atlas" with 254 illustrations. Philadelphia. J. B. Lippincott Co. Regular Edition $6.50. Special student's edition, without atlas, $3.00.

As the sub-title states, this book is an "orientation in the basic principles of diagnosis by the Roentgen method." The author, who is professor of Roentgenology at the University of Minnesota, has expanded and revised an originally simple set of notes which had been used for many years as a foundation in his didactic lectures on X-ray diagnosis to undergraduate medical students. The resulting volume, while not in any way a true reference work in roentgenology, is certainly a splendid outline of the important features of the application of X-rays to the diagnosis of disease.

The opening section covers the general principles of roentgen diagnosis. The nature and value of the method are outlined. The author emphasizes that the method is not to be considered as an exclusive diagnostic procedure, but merely as a part of the examination of every patient. In many instances, of course, it may be the part of utmost importance.

The remaining sections deal respectively with bones and joints, diseases of the spine and spinal cord, the skull and its contents, the thorax, the digestive tract, gallbladder, miscellaneous abdominal pathology, the urinary tract, female generative organs, and miscellaneous diagnostic fields.

In all these sections there are concise outlines of the X-ray signs shown in the various diseases, together with excellent tables of differential diagnosis. Throughout these chapters there are paragraphs in which is presented as definitely as possible the relative value and the limitations of the X-ray diagnosis of each particular disease.

While primarily the book is intended as a foundation for the teaching of roentgenology to undegraduate medical students, it is also very useful as an initial textbook for physicians intending to enter the special field of roentgenology. The keen clinical knowledge and critical judgment of the author are reflected throughout, and offer a constant check to acquiring a distorted or one-sided point-of-view concerning the application of the X-ray method to any particular diagnostic problem. Even to experienced roentgenologists this book may be of value in furnishing concise, accurate and complete outlines of diagnostic data.

The regular edition has an atlas of illustrations in the back of the book, with reproductions of selected, characteristic roentgenograms, line drawings and valuable diagrams. A special student's edition is also available without the atlas, at a substantial reduction in price.

Isaac Gerber, M.D.

Statement of the Ownership, Management, Circulation, Etc., Required by the Acts of Congress of August 24, 1912, and March 3, 1933

of *Rhode Island Medical Journal*, published monthly at Providence, Rhode Island, for October, 1939.

State of Rhode Island } ss.
County of Providence }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Albert H. Miller, M.D., who, having been duly sworn according to law, deposes and says that he is the Managing Editor of the *Rhode Island Medical Journal*, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Rhode Island Medical Society, 106 Francis Street; Managing Editor, Albert H. Miller, M.D., 106 Francis Street.

2. That the owner is: Rhode Island Medical Society, 106 Francis Street.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation, has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

Albert H. Miller, M.D.

Sworn to and subscribed before me this 27th day of September, 1939.

[seal.] John E. Farrell, *Notary Public.*
(My commission expires June 30, 1941.)



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*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

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FISKE FUND PRIZE ESSAY
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The Trustees of the Fiske Fund announced at the annual meeting of the Rhode Island Medical Society, held in June 1939, that they proposed the following subject for the year 1940.

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For the best essay on the subject worthy of a premium they offer the sum of two hundred and fifty dollars ($250.00). Every competitor for the premium is expected to conform with the following regulations, namely:

To forward to the secretary on or before the first day of May 1, 1940, free of all expense, a copy of his dissertation with a motto thereon, and also accompanying it a sealed envelope having the same motto, inscribed on the outside, and his name and address within.

Previously to receiving the premium awarded, the author of the successful dissertation must transfer to the Trustees all his right, title and interest in and to the same, for the use, benefit and behoof of the Fiske Fund.

Letters accompanying the unsuccessful dissertations will be destroyed unopened, by the Trustees, and the dissertations may be procured by their respective authors if application be made therefor within three months.

The essays must be typewritten and should not exceed 10,000 words. If an essay be illustrated, such illustrations will be published at the expense of the author.

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Reprint from *The Journal of The Medical Society of New Jersey*, October, 1939.

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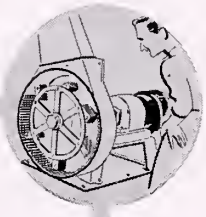
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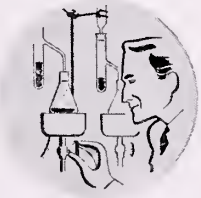


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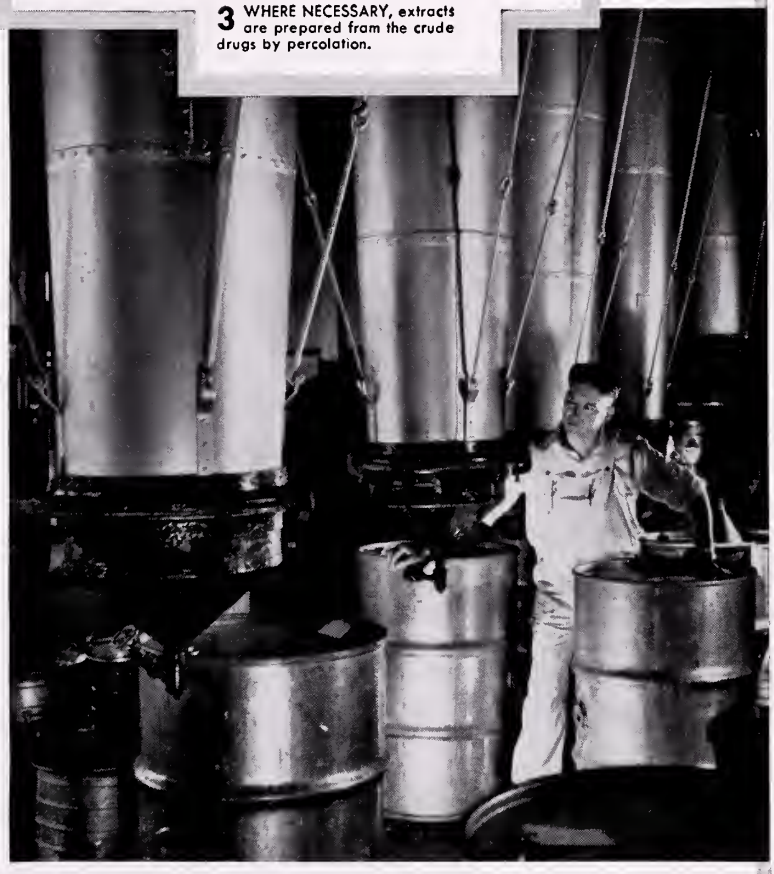
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The earliest techniques for determination of vitamin A were similar in that they all first provided for depletion of the body stores of vitamin A of the rat by restriction of the animals to basal rations free from or quite deficient in the vitamin. In the "rat growth" method, the vitamin A activity of the material under assay was estimated by feeding graded dosages to animals depleted of the vitamin (as gauged by cessation of growth) and recording the ensuing growth response (2). In the "curative technique," the incidence of xerophthalmia served as the criterion of vitamin A depletion (3), and vitamin A activity was estimated by determining the dosage of the test material necessary to establish cure of xerophthalmia.

Techniques were also gradually developed which in some instances embodied features of both the growth and curative methods. Still another technique based on the continuous appearance of cornified epithelial cells in vaginal smears—a further characteristic of vitamin A deficiency in female rats—was evolved (4). Further research showed that colorimetric and spectrographic methods may be adapted to the estimation of vitamin A activities of specific materials (5).

Of all methods for estimation of vitamin A in foods, the rat growth technique appears to be favored today (6). Gradual improvements and refinements—as well as recognition of the existence of provitamins A—have led to development of the growth method now included in the U. S. Pharmacopeia XI. This method requires that young rats weighing 40 to 50 grams (at an age not exceeding 28 days when placed on a vitamin A deficient ration) shall manifest symptoms characteristic of vitamin A deficiency within a period of 25 to 45 days. Rats properly depleted of vitamin A reserve are assembled in negative control groups receiving no supplement, reference groups receiving graded doses of the standard reference material, and assay groups receiving graded doses of the assay material. During the ensuing period of not less than 28 days, the test animals are fed daily doses of the proper supplements. The body weights of the animals are recorded at frequent intervals during and at the end of the assay period. From the average gains in body weight of rats in the assay and reference groups, dosages of assay and reference materials, and the vitamin A activity of the standard of reference, the vitamin A activity of the assay material is calculated.

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(1) 1913. J. Biol. Chem. 16, 423 and 255.
(2) 1928. J. Biol. Chem. 78, 671.
(3) 1931. J. Dairy Sci. 14, 229.
(4) 1927. J. Biol. Chem. 73, 153.
(5) 1938. J. Am. Med. Assoc. 111, 245.
(6) 1936. The Pharmacopeia of the United States, Eleventh Decennial Revision, page 478.
(7) 1929. Ind. Eng. Chem. 21, 347.
1936. J. Am. Diet. Assoc. 12, 231.
1936. Mass. Agr. Expt. Sta. Bull. No. 338.
1938. Nutrition Abstracts and Reviews, 8, 281.

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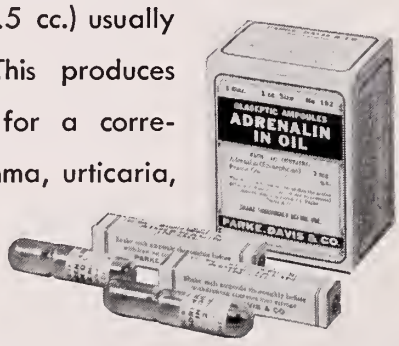
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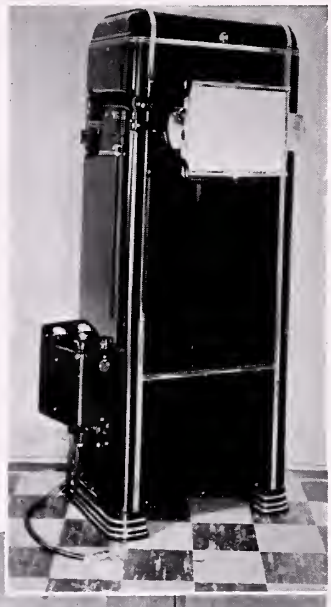
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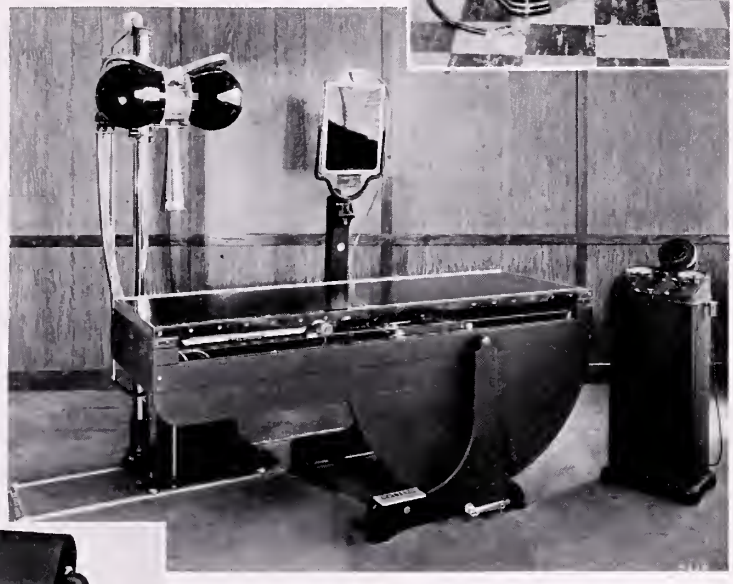
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THE RHODE ISLAND MEDICAL JOURNAL

VOLUME XXII DECEMBER, 1939 NUMBER 12

ANOREXIA NERVOSA

GEORGE H. ALEXANDER, M.D.
BUTLER HOSPITAL, PROVIDENCE

In 1874 Sir William Gull described an illness characterized by persistent loss of appetite, great emaciation, and an abnormal mental state. He observed that the disease usually occurred in the young adult and that despite extreme emaciation, an unusual degree of bodily vigor was preserved. He felt that the presence of such vitality, contrasting sharply with the skin-and-bone appearance of the patient could not be reconciled with inanition due to constitutional disease. This impression was fortified by the presence of psychological abnormalities which were always in evidence. With these considerations in mind, he expressed the belief that the condition which he described represented a form of hysteria, and he gave to the illness the name "anorexia nervosa."

The general characteristics of anorexia nervosa, and the treatment of it during the latter years of the past century, are well described in Jelliffe's translation of Dejerine and Gautcher's textbook "The Psychoneuroses." In our own day fairly numerous articles concerning the disease have appeared, and long strides have been made in diagnosis and treatment since the time of Gull. Such progress became possible by virtue of new diagnostic aids, such as the basal metabolic apparatus, and by increased treatment resources in the form of endocrine-gland preparations. The advances made along these lines, however, have lent nothing new to our knowledge of the basic etiological factors upon which the illness develops. Though the test tube and microscope failed to fulfill our hope in the search for causative factors, efforts to discover them have not been wholly sterile of results in another field of investigation.

The psychiatrist, employing a specialized approach to this problem of etiology has in recent years been able to shed new light upon the role played by the presence of abnormal emotional states, which are closely related to the appearance of the disease. It is, indeed, only this new knowledge gained in more recent years, that justifies the presentation of this paper; and its prime purpose is to focus attention upon the inter-relationships of the organic and psychological pathology found in the illness.

Insofar as we are limited in the time at our disposal, we must be brief in our remarks. We shall have to forego a more detailed historical review of the illness, as well as quotations from the authoritative literature. With even greater reluctance, we shall have to omit all consideration of the problems of differential diagnosis; in particular that important and often obscure distinction between anorexia nervosa and pituitary cachexia or Simond's Disease. We shall have opportunity to but briefly mention some of the most important of the clinical features of anorexia nervosa; to present a case report, exemplifying the classical picture seen; and to briefly discuss the modern therapeutic measures employed in the attempt to restore the patient to health.

With regard to the general characteristics of anorexia nervosa, we note that the illness is predominantly one occurring during the period of adolescence. It is considerably more common in females than males. A home environment in which there is great oversolicitousness on the part of the family toward the patient appears to provide a fertile soil for the growth of the illness. The course of the disease is variable and depends largely upon the extent of food restriction and the adequacy of treatment administered. Spontaneous remissions and recoveries probably occur frequently among the milder cases, which do not come under the care of a physician. In adequately treated cases all but the most severely malnourished patients have a good chance of recovery, although the return to normal of certain functions, menstruation for example, may be deferred for a year or two. Death, when it does occur, usually results from superimposed infection in a state of starvation. Relapse quickly

following intensively treated severe cases have a poor prognosis as to life. This is understandable when we bear in mind that the regained weight under treatment consists chiefly of fatty tissue which offers but a weak defense against another quickly following period of inadequate nourishment.

The prominent signs and symptoms of the illness represent the widespread effects of prolonged and severe metabolic malfunctioning and dehydration. There is marked loss of fatty tissue, often to the point of severe emaciation. The vital signs are lowered to varying degrees. Hypertension with consequent circulatory impairment, contributes to fatigue, coldness of the extremities and impaired nutrition of the vital internal organs. The basal metabolic levels may be lower than commonly seen in hypothyroidism. The scantiness of the excretions reflect the diminished food and fluid intake and the dehydration present. The skin dryness, falling out of hair, and increased brittleness of the nails likewise give evidence of dehydration and impaired thyroid gland function. Scantiness, culminating in complete suppression of the menstrual flow also reveals the extensive involvement of the ductless-gland system. Varying degrees of secondary anemia, leukopenia and lowered blood sugar levels are commonly present. In late stages, nerve trunk tenderness or paraesthesias may denote the peripheral neuritis resulting from avitaminosis.

The mental changes appearing in the illness are variable and conditioned greatly by the general personality characteristics of the patient. Hypercritical attitudes, irritability, emotional instability, mild depressive trends, and paranoid feelings may appear. Frank psychotic manifestations in the form of delusions or hallucinations are absent. Environmental contact is well preserved. As previously mentioned, the preservation of unusual degrees of physical activity and mental alertness often stands in curious contrast to the grossly emaciated appearance of the patient. The attitude of the patient toward the taking of nourishment is peculiarly characteristic of this disease.

It presents features which give it a distinctive coloring when compared with ordinary anorexias, which so commonly develop with constitutional disease. The patient who becomes anorexic with states of physical illness will usually make strong efforts to eat and to retain nourishment and is greatly concerned if he finds himself unable to eat adequately or vomits that which he has eaten. The patient with anorexia nervosa, on the other hand, seems to go out of his way to avoid eating. He will often deliberately conceal portions of the diet offered and pretend that it has been eaten. If forced to eat, he may deliberately try to make himself vomit, either at the time, or later on, secretly. The patient with anorexia nervosa, with full realization of his acute state of illness, even fearful of threatened death and protesting strongly his desire to take nourishment, will nevertheless attempt to deceive the family, nurse, or physician with regard to his actual intake of food. There is, in other words, evidence of a tremendous antagonism toward food seen in these patients. In this strong aversion to food one may see all too clearly the reflection of intensely powerful forces which work within the patient's thinking and feeling; these forces drive him against his reason, judgment, and will, into behavior directly opposed to his own well being. With our present day concepts of the organization of the mind, we ascribe such paradoxical phenomena to the clashing of strong mental forces arising from the known and unknown portions of his mind. The strength of the unknown or unconscious force is clearly evident in its ability to compell the patient to act in ways he would avoid if possible, and which he intellectually recognizes as harmful to himself. The nature of these forces we cannot elaborate upon here, but in the case to be reported we shall be able to glimpse them to some extent as they become recognizable during the psychotherapeutic treatment of a patient.

The aversion to food which initiates anorexia nervosa may appear without apparent reason in some cases. In others it may arise with the loss of appetite which commonly accompanies many organic diseases and becomes recognized in its true neurotic light only when it persists long after the original illness has subsided. In still other cases, as in the one to be discussed, the first restriction of food intake was in the form of a self-imposed diet, ostensibly to lose weight.

The primary lesion in anorexia nervosa is to be sought in the psychological structure of the individual rather than in his body structure. It is in the abnormal emotions or feeling-tones of the patient that we must seek the explanation for the

onset and persistence of the intense anorexia which develops. The gross bodily pathology which we later observe is but the inevitable consequence of inadequate nourishment which follows upon the development of abnormal feeling-tones of aversion toward food. In the case we now report, and in the subsequent discussion, the chief emphasis will be placed on the nature of this underlying emotional disturbance, as it was revealed by the patient during psychotherapeutic treatment.

Case Report:

The patient, a fourteen year old American-born girl of Italian parentage and a second year High School student, was admitted to the hospital because of refusal to eat, and severe emaciation. She remained in the hospital for eight months and was discharged greatly improved. The history obtained revealed no significant deviations from the normal with respect to heredity, birth, early development or environmental influences. She had obtained honor-roll scholastic rating in both grade and High School studies. While inclined toward shyness in groups, she could not be considered at all seclusive. In the home environment she had more recently felt increasingly resentful toward her parents, and her mother in particular, stating that they seemed excessively concerned about her welfare and happiness. This she felt detracted from their attention from her two older sisters. Both siblings of the patient were physically well and emotionally well adjusted. A younger sister had died at the age of ten years of an illness associated with loss of appetite and vomiting of blood. More definite details as to the exact nature of this illness were not obtainable. The home atmosphere in general and the economic status was that of the average Italian immigrant family.

The patient's illness had its onset about eleven months prior to her hospitalization. She had gained weight during the preceding summer and her menses had become somewhat irregular and scanty. Feeling that she was too fat, she began to diet. She immediately began to lose weight and her menstrual periods ceased entirely two months later. She continued to diet, however, and for about six months before coming to the hospital, her daily nourishment was limited to a small piece of toast and a cup of coffee for breakfast and an occasional cracker during the day. She began to complain of increased sensitivity to cold, dryness of skin, cracking of the fingernails, loss of hair and weakness. Three months before admission a basal metabolic determination and X-ray studies of the gastro-intestinal tract were said to have revealed nothing of a pathological nature. About two months before admission to the hospital, the patient was finally obliged to give up attendance at school and remained most of the time in bed because of weakness. Her family physician found it impossible to persuade her to eat. She was occasionally discovered throwing food left with her out of the window. She became increasingly irritable, sullen and resentful, particularly with her parents when they sought to persuade or force her to eat. There were occasional periods of self-blame and weeping because of the worry she caused her parents at home. Because of her failure to respond to home treatment, her loss of weight—from 130 to 73 pounds—and the increasing mental disturbance, she was admitted to Butler Hospital.

A complete systemic and neurological examination in the hospital revealed a very emaciated, adolescent girl of about fifteen years of age, five feet four and a half inches in height and weighing seventy-three pounds. The hands and feet were cold, the skin was dry and slightly scaly, particularly on the soles of the feet. There was normal feminine distribution of fairly abundant pubic hair, but axillary and lateral eyebrow growth was sparse. The breasts were atrophic. Temperature rectally was about one degree subnormal. The pulse rate was 60 and blood pressure 90/72. The heart, lungs and abdominal viscera revealed no abnormalities. Optic discs, visual fields and pupillary reactions were normal. She failed to recognize the odor of camphor and wintergreen. The tendon reflexes were normal. Abdominal reflexes were somewhat sluggish. All other findings on examination were within normal limits, and no signs or symptoms of acute or chronic organic illness were elicited beyond those consistent with the state of extreme emaciation and dehydration.

The laboratory studies revealed a 4,650,000 red blood count with a hemoglobin of 80; and a white-cell count of 4200, with a normal differential. Several urinalyses were all negative. The blood urea was 14; blood sugar 100; blood calcium 9.7 and blood cholesterol 195. Blood Wassermann and Kahn was negative. The basal metabolic rate was —29. A sugar tolerance test done shortly after

admission presented a diabetic-type curve. Upon recheck one month later, the curve was normal. An X-ray examination of the skull and its contents revealed no pathological changes. X-ray examination of the chest and of the adrenal regions were likewise negative. A psychometric evaluation gave the patient an I.Q. of 111 on the Terman Merrill Binet Test (Form M). Psychiatric examination revealed no evidence of a psychotic state. Orientation was intact in all spheres. There were no abnormalities of verbal production or motor activity. Mood and affect were adequate and appropriate. Anxiety and mild depressive trends were most prominent in the mental content, which presented no other pathological features. Insight was present relative to the fact that she was ill, but judgment as to the need for hospitalization was impaired and the patient felt that she should have been allowed to remain at home under treatment.

Upon the admission of the patient to the hospital, all treatment was immediately directed toward the improvement of nutrition and the conservation of physical energy. She was confined to bed and small quantities of milk and cream were given at one to two hour intervals. Insulin in small amounts was given three times daily, followed by several ounces of orange or tomato juice, fortified with lactose. The taking of nourishment as such was minimized and the patient was given to understand that the fluids taken were important only as a solvent for medicine to increase her appetite. For this reason she received placebo capsules before each feeding. The amount of nourishment was gradually increased to include soft solids while the amounts of insulin given were gradually reduced. One month after admission she had gained seven pounds, but was becoming very restless, irritable and critical, because of continued confinement to bed and consequent limited activity. At this time mild feelings of a paranoid nature appeared relative to being watched by the nurses. These feelings had some basis in reality since the patient actually was required to eat under observation. At this time, by means of an emotional appeal to her mother, she persuaded the latter to take her home, but she was returned to the hospital again within twenty-four hours by her family. Following her return she rejected the amounts of nourishment she had formerly taken and was detected on several occasions throwing food out of the window or hiding it. This brief home visit resulted in the loss of four pounds in weight, and with her persistent refusal to eat, nasal feedings were required on a few occasions. During the second month endocrine-gland therapy was instituted, with the feeling that the patient was suffering from Simond's disease. The endocrine preparations were given in gradually increasing amounts and included thyroid, theelin, antuitrin S, suprarenal substance, and whole gland pituitary extract. She also received amino acetic acid, cod-liver oil, orange and tomato juice and supplementary vitamins in capsule form. Elixir of I.Q. and S. was also prescribed and a two to three thousand calory diet was offered but not all taken. These medications were manipulated in dosage as seemed indicated during the next three or four months of treatment. During the third month the patient was permitted to visit for a few days with an aunt but the development of an upper respiratory tract infection and persistent rejection of food made necessary her return to the hospital in a few days. Basal metabolic rates during this period varied from —31 to —39. Blood pressure averaged about 110/80. Vital signs were within normal limits. Sleep was excellent but appetite still extremely poor. Blood cholesterol levels ranged from 190 to 200. Complaints of coldness of the extremities, dryness of the skin and mild fatigue persisted, but the patient was surprisingly active in routine activities. Despite the intensive glandular therapy and some general improvement with increased food intake, the patient's weight at the end of the fifth (?) month of hospital treatment was only 78 pounds, a gain of only five pounds over her admission weight. It was decided at this time to treat the patient as a case of anorexia nervosa and at the beginning of the fifth month of treatment, all endocrine therapy was abruptly terminated. (Cf. Fig. I.) Treatment was continued with only a high vitamin, high caloric diet and psychotherapy. The response to this change was immediate and almost dramatic. Her appetite immediately improved. She appeared much more contented and gained weight rapidly. By the end of the sixth month, she had gained eleven pounds in weight. Basal metabolic levels, after a transitory drop to —48, rose to —4. Blood pressure levels rose to an average of 120/70. By the end of the seventh month, she weighed 106 pounds, was eating and sleeping well and was alert and cheerful. By the end of the

eighth month her weight was 115 pounds; blood pressure was 130/90. Her eyebrow and axillary hair growth had returned and her sensitivity to cold was markedly diminished. Her only complaints were those of lower leg sensations of numbness and tingling, due to a mild peripheral neuritis. Her menses had not returned. The greatly altered physical appearance and pleasant personality of the patient at this time, stood in sharp contrast to the emaciated, sullen, irritable and hypercritical patient of but three months before. She was discharged from the hospital to her home at this time with the understanding that she would return at regular intervals for further observation and any required treatment.

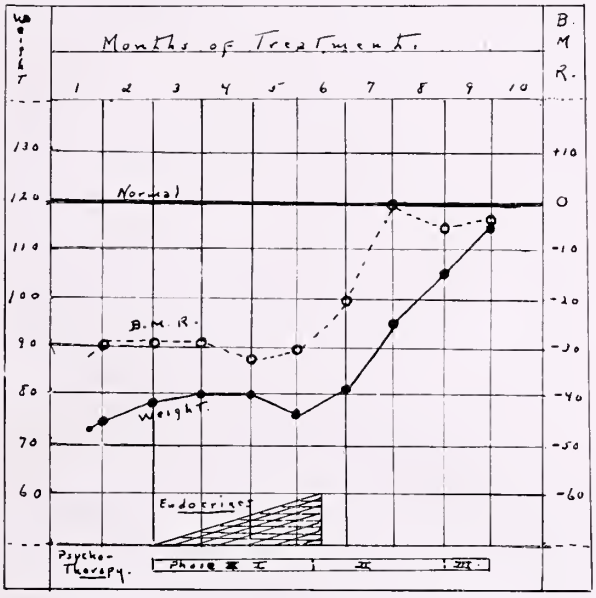


Figure 1

Discussion:

The commonly employed treatment procedures directed toward the organic pathology in anorexia nervosa have been outlined in the case report and require little elaboration. In general, the symptomatic treatment includes all measures which tend to conserve energy output, and those directed toward the re-establishment of normal nutrition. The latter includes the initial use of frequent small feedings which are gradually increased to a full high caloric, high vitamin diet, together with the use of metabolic stimulants, such as insulin, iron, liver and vitamins. These may be supplemented by the use of multiple endocrine gland hormones. It is the opinion of most authorities, however, that the effectiveness of these therapeutic measures is largely dependent upon the simultaneous treatment of the patient's underlying emotional disorder by some form of psychotherapy. It is probably fair to say that, in general, psychotherapy is of more importance in treatment than endocrine-gland preparations. The effectiveness of the latter may be essentially nil due to failure of utilization by the body in its state of metabolic malfunctioning. The mental organization, however, of the patient preserves its capacity to think and to feel and to assimilate, as it were, psychological medication in the form of psychotherapy. In the case reported above, it is evident that no appreciable beneficial effect was obtained with the use of endocrine products in large doses over a period of five months. With elimination of the glandular products entirely and continued treatment with diet and psychotherapy only, improvement was immediate and progressive to the point of essential recovery within four months.

Insofar as we are concerned primarily with the mental aspects of anorexia nervosa, we shall devote the remainder of the discussion to reviewing briefly the psychotherapeutic treatment of the patient and the contribution it made to the understanding of the emotional factors which had set the disease process in motion. Psychotherapy was instituted shortly before the termination of the patient's confinement to bed following admission. The psychotherapeutic sessions were conducted by a psychoanalytically trained physician, but no one school of psychotherapeutic thought was favored. Suggestion, persuasion, reeducation, free association and so-called, simple "unloading," types of approach were used, as they appeared indicated at given times in the course of the treatment. The course of psychotherapy consisted of 68 one-hourly sessions. The physician administering psychotherapy detached himself completely from all contacts with the patient other than those during psychotherapeutic sessions. All matters relative to treatment of the organic aspects of the illness and questions relative to routine hospital care of the patient were under the direction of another staff physician. In this way the psychotherapist placed himself in a position with regard to the patient, in which she could expect neither rewards nor punishments. She

was encouraged to express all of her thoughts and feelings freely and the therapist awaited patiently the development of sufficient confidence on the part of the patient to enable her to do this.

It was obvious at the outset that the patient's attitude toward her body and toward food was not that of the average obese individual who starts to diet. In the first place, it will be noted that at the time she started to diet, she could not have been called obese, for she was five feet, four and a half inches tall and weighed but one hundred thirty pounds. Her estimated age-height, weight should have been one hundred twenty pounds. In the second place she did not react toward food in dieting as most obese people do. When the obese person has lost the desired weight, they do not further restrict their food intake. In fact, most of them have difficulty in controlling the desire to eat greater amounts of food. This patient, however, when she had dieted to the point of emaciation and illness and was even fearful of dying, found herself not only unable to increase her diet, but obliged to restrict it to greater and greater degrees. It could be logically assumed, then, that body fat and food had some obscure but powerful emotional significance for her. In other words, fat had come to symbolize something to her unconscious mind which she wished to be rid of, and food represented something dangerous which would prevent the fulfillment of that wish. The psychotherapeutic problem became one of first ascertaining and then making understandable to the patient the symbolic meaning of body fat and food to her.

In general, three rough divisions could be made of the thoughts, feeling and behavior expressed by the patient during the course of psychotherapy. (Cf. Fig. I.) During the first period, she talked mainly of food in relationship to her feelings of anger toward her parents while she was at home, and toward the physicians and nurses in the hospital. She emphasized their unfairness in urging or forcing her to eat, and sought in open and subtle ways to persuade the therapist to have her diet and treatment altered in ways she desired. When frustrated in these attempts, she became angry, sullen, reticent and uncooperative with the therapist. The second phase of psychotherapy became clearly discernible a few days before the discontinuance of the endocrine therapy. It was marked by great emphasis upon the sensitivity which she had felt in regard to her bodily appearance with the changes of puberty. Her breast and hip development, however, was secondary in importance to her as compared with the fat deposits of the abdominal wall, and the protrusion of her lower abdomen. During this period she was very emotional, wept freely, became extremely angry with the psychotherapist at times, and during an occasional interview remained obstinately mute for the entire period with him. With the working through of this material, she finally revealed the underlying reason for starting to diet. She stated that one or two of her classmates in school had become pregnant and had had to leave school shortly before she started to reduce her own food intake. She became concerned about her own bodily changes associated with puberty and chiefly the abdominal fatty deposits. Although fully aware intellectually that heterosexual contact was necessary for pregnancy, and that she had engaged in no such activity, she nevertheless began to fear that in some unknown way she might have become pregnant. When her mother suggested that she wear a girdle, she became more anxious and at about this time decided to diet. A month or so later her menses ceased entirely and this added to her fears of possible pregnancy. Shame and guilt feelings prevented her from revealing these thoughts to anyone.

The revelation of this pregnancy fantasy and the discussion of it with her led to the third distinguishable phase of response to treatment. She became entirely congenial during psychotherapeutic sessions and no longer manifested the tenseness, reticence, or excesses of emotion which had existed earlier. Her general social contacts became normal, she ate a full diet without difficulty and continued to gain weight with surprising rapidity until her discharge.

The contribution made by psychotherapy to the recovery of this patient now becomes evident. The sessions with the physician enabled him to learn of the patient's pregnancy fantasy which had formed the real reason for her starting to diet and made possible the subsequent illness which developed. The use of psychotherapy then enabled the physician to aid the patient to master the anxiety created by this fantasy and by so doing enabled her to eat normally and regain health. It is to be noted that the conflict which had developed in the patient's mind represented a clash between her intellectual

realization that she could not really be pregnant and the overpowering feeling that she might be. Her intellect, judgment, reason and will to the contrary, she was, nevertheless, forced to behave as though her feelings were true, and the result was the development of anorexia nervosa.

A deeper exploration of her mental strata which would have revealed the unconscious sources of this conflict lay beyond the field of psychotherapy. The results of psychoanalytic studies of similar cases have shown, however, that many young children believe for a time that babies grow in the mother's stomach from something that the mother has eaten. These fantasies, at one time conscious, are forced back into the unconscious very early because of painful associations with them and are eventually entirely removed from the child's memory. A later experience, however, particularly one occurring during adolescence, when sexual concern is increased by the biological changes occurring during that period, may release the emotional forces which were buried with the infantile fantasies, and permit their expression in the form of neurosis.

In this case we cannot conclusively demonstrate the unconscious factors at work, because exploration was not carried into deep psychological strata. It is probable, however, that similar infantile pregnancy-fantasies underlay this patient's unwarranted pregnancy fear. Food became symbolic of the dangerous impregnating agent and therefore had to be avoided, and it is obvious that the patient's lower abdominal fat deposits consciously symbolized a pregnant abdomen to her. Thus, the underlying motive for dieting was not actually to lose weight as such, but to lose a pregnancy fantasy and the fear produced by it. Psychotherapy, by strengthening the forces of the conscious mind aided her to resubmerge the anxiety-producing factors to deep, unconscious levels of the mind where they were then incapable of expression in the form of neurotic illness.

Summary:

A fifteen-year-old girl who had progressively decreased her food intake in order to lose weight, was admitted to the hospital about ten months after starting to diet. Her weight had fallen from 130 to 73 pounds and there was extreme emaciation, hypotension, bradycardia, very low basal metabolic rate, and suppressed menses. Mild personality disturbances were present. Treatment for five months by restricted physical activity, high caloric, high vitamin diet, intensive hormone injection and psychotherapy produced no significant improvement, physically or mentally. All endocrine therapy was then abruptly omitted and treatment continued only by the use of diet and psychotherapy. The response was immediate, favorable, and progressive. Within four months the patient had attained a weight of 116 pounds and was physically and mentally improved to the extent that discharge from the hospital was possible. This sudden and dramatic shift toward recovery was simultaneous with the discontinuance of all endocrine therapy and with a favorable change in emotional fields during the course of psychotherapy.

The psychotherapeutic approach revealed the true reason for the patient's dieting and the subsequent development of her anorexia nervosa. The decisive dynamic factor lay in the anxiety created by a pregnancy fantasy. With psychotherapeutic treatment, the patient was enabled to master her underlying emotional conflict, and to eat adequately again. On discharge nine months after admission, physical and mental health was normal except for the persistence of amenorrhea.

The author is indebted to Dr. Arthur H. Ruggles, Superintendent of Butler Hospital, for permission to utilize the case-history abstract from the files of Butler Hospital.

PHYSICIANS AS CITIZENS

Physicians, as good citizens and because their professional training specially qualifies them to render this service, should give advice concerning the public health of the community. They should bear their full part in enforcing its laws and sustaining the institutions that advance the interests of humanity. They should cooperate especially with the proper authorities in the administration of sanitary laws and regulations. They should be ready to counsel the public on subjects relating to sanitary police, public hygiene and legal medicine.

From the Code of Ethics of the A. M. A.

THE RHODE ISLAND MEDICAL JOURNAL
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PNEUMONIA — BE PREPARED!

The season in which infections of the respiratory tract becomes frequent and menacing has arrived. Of these infections the most important is pneumococcus pneumonia. Although the incidence of this disease this year may be as great or greater than the average, it will be surprising if the death rate is not by far the lowest on record. This will be due to two main factors: first, that positive curative methods of treatment (specific serum and sulfapyridine) are available and second, that the medical profession in general is alive to the situation and knows the efficacy of these measures *when applied early*. Serum treatment has now been developed to such a degree that not only are specific sera for all types of pneumococci available but adequate dosage and methods of administration are well understood. It has been announced that for indigent patients serum will be provided free of charge by the State Department of Health. Sulfapyridine, too, has now been sufficiently studied so that its value and limitations are well recognized. If pneumonia this year proves to be anything like the fatal disease that it has been in the past it will be directly due to the failure of the medical profession to act and act quickly whenever a case of this disease is diagnosed *or even suspected*.

The facts are these — The occurrence of pneumonia constitutes an emergency. Effective treatment is available, and it is the more effective the earlier it is applied. Treatment should be started as soon as the disease is definitely suspected. Serum treatment requires type diagnosis, and the dosage is dependent upon the amount of lung involvement and the presence or absence of bacteremia so that blood cultures are always, and X-ray examinations usually, indispensable. Sulfapyridine is an effective but dangerous drug and its use requires repeated blood examinations including estimation of the level of the drug in the blood stream and determination of the leucocyte count, red cell count and haemoglobin. Many cases will require the use of both sulfapyridine and serum. Facilities for first class nursing care, intravenous infusions and oxygen therapy must be available. All this means hospitalization except in very rare instances. To wait for the appearance of signs of pulmonary consolidation is to reduce greatly the chances of recovery.

By full understanding of this situation and prompt hospitalization and treatment of all suspected cases of this desease the death rate can and must be reduced to a point lower than ever before in the history of mankind.

ARTHUR H. HARRINGTON ASSEMBLY HOUSE

On Wednesday, October 25, 1939, the new auditorium building at the State Hospital was dedicated to Dr. Arthur H. Harrington and named the "Arthur H. Harrington Assembly House." The program consisted of two parts, a memorial service held at 12:30 in the Congregate Dining Hall, at which organ selections and selections by the Choir were rendered and prayers offered by the three Hospital chaplains. Following this, lunch was served, and at 2:30 the dedicatory exercises were held in the main hall of the auditorium. Mr. Vincent Sorrentino, Director of Social Welfare for the State of Rhode Island, presided. A preliminary address was given by the Honorable James O. McManus, Lieutenant-Governor, following which Dr. John E. Donley gave the dedicatory address and formally dedicated the building as the Arthur H. Harrington Assembly House.

Dr. Donley paid an eloquent tribute to Dr. Harrington and the work for which he was responsible at the State Hospital. The exercises were opened and closed with selections by the symphony orchestra of the Works Projects Administration music project of Rhode Island. There was a large attendance representing friends of Dr. Harrington in professional and business life, and there were many present representing various social welfare organizations in the state. Psychiatric representatives from adjoining New England states also took part.

PROVIDENCE MEDICAL ASSOCIATION

October Meeting

A regular meeting of the Providence Medical Association was held at the Medical Library on Monday, October 2, 1939. The meeting was called to order by President Harry C. Messinger at 8:35 p. m. The minutes of the preceding meeting were read and approved. The Secretary read a communication from the Rhode Island Society for Neurology and Psychiatry relative to its autumn meeting. The Secretary also read a communication from Dr. Francis V. Corrigan, Chief of the Division of Child Hygiene, relative to suggested modifications in the policy of the Association and of the State Department of Health in regard to tuberculin tests and X-ray reports of high school children. The latter communication was referred to the Committee on Tuberculosis for study and recommendations.

The Secretary reported for the Executive Committee as follows: That it had been moved and passed by the Executive Committee that this Association accept the invitation of the American Public Health Association to have representation in that group, and that the Executive Secretary be the representative to be enrolled. It was also moved and passed that the Executive Secretary should attend the National Institute on Public Health Education at Pittsburg, October 15 to 18, and that the Association should pay the expenses incurred by such attendance.

The President announced that the obituary of Dr. John L. Sprague, as prepared by Drs. Jesse Mowry and Carl R. Doten, was on file with the Secretary.

The President introduced Mr. Stanley H. Saunders, Executive Director of the Rhode Island Hospital Service Corporation, who explained the workings of the local Blue Cross (group hospital plan) and who answered questions relative to the operation of the service.

The Secretary reported that the Executive Committee recommended Dr. Nicholas A. Pournaras for re-election to active membership and also recommended for election to active membership the following:

Dr. Lewis Abramson
Dr. Ercole A. Addonizio
Dr. Francis A. DeCesare
Dr. Stephen J. Fortunato
Dr. Genarino R. Zinno

Dr. William M. Muncy moved that these applicants be elected to active membership. The motion was seconded and unanimously passed.

The President announced the appointment of Dr. John Dziob to succeed Dr. J. Edwards Kerney as chairman of the Committee on Credit and Collection. The President announced the appointment of the following members to serve as the Committee for the Community Fund Campaign of the Association: Drs. A. M. Burgess (chairman), G. W. Bellano, K. G. Burton, G. Capobianco, F. V. Corrigan, J. Cox, F. Dimmitt, D. Freedman, C. H. Gannon, F. V. Garside, J. Hamilton, H. Hyer, J. Langdon, W. M. Muncy, J. F. Murphy, V. J. Oddo, F. Riley, E. Saklad, E. T. Streker, D. V. Troppoli, and R. H. Whitmarsh.

The President introduced Dr. A. M. Burgess, Chairman of the Community Fund Committee, who spoke briefly on the plans for the Campaign this year.

The President announced the plan for a meeting of the Rhode Island Nutrition Association and urged that members interested in the work of that society attend the meeting.

The President introduced the guest speaker of the evening, Dr. Allen Greenwood, of Boston, who presented an interesting paper on "Eye Diseases Related to General Medicine and Surgery." The paper was discussed by Drs. Frank J. McCabe, Charles Hawkins, N. Darrell Harvey, and George VanBenschoten, after which the President introduced to the members present Dr. Merrill King, who had accompanied Dr. Greenwood here from Boston.

The hour being late, it was voted, at the request of Doctor S. Morein, to postpone the presentation of his paper on "Newer Aspects of the Medical Treatment of Gastric and Duodenal Ulcers" until a future meeting.

Adjournment was at 10:35 P. M.

Attendance 137. Collation was served.

Respectfully submitted,

HERMAN A. LAWSON, M.D., *Secretary*

RHODE ISLAND HOSPITAL

On October 15th, Dr. Charles Frederic Begg of West Roxbury, Mass., began a two year internship. Dr. Begg attended Bowdoin College for two years, received his B.A. degree from Boston Uni-

versity in 1935, and his M.D. from Harvard Medical School in 1939.

On November 15th, Dr. Edward Mansfield Gunn began a two years internship. Dr. Gunn, whose home is in Westerly, attended Rhode Island State College and Syracuse University Medical School. He interned at Chapin Hospital for three months and at Providence Lying-In Hospital, one month.

Dr. Seth Read has accepted a position at Wallum Lake Sanatorium. He assumed duty there November 1st.

MEMORIAL HOSPITAL

Interne Alumni Clinic Day

Wednesday, November 1, 1939, the Memorial Hospital held its Annual Interne Alumni Clinic Day. At the morning session, a surgical operative clinic, under the direction of Dr. Charles H. Holt, chief of the Surgical Division, was given by Drs. Henry B. Moor, Henry J. Hanley, and Meyer Saklad, Anesthetist, and by Drs. Charles H. Holt, G. Raymond Fox, and John H. O'Brion. Dr. Francis B. Sargent, chief of the Ear, Nose and Throat Division, with Dr. Gordon J. McCurdy, gave a demonstration of the endaural mastoid. Dr. G. Raymond Fox, Assistant Surgeon to the Division of Radium Therapy, presented a case of carcinoma of the cervix with radium implantation (French technique).

Under the direction of Dr. John F. Kenney, chief of the Medical Division, cases of hemolytic streptococcic septicemia with recovery, subacute bacterial endocarditis, Hodgkin's disease, and alcoholic vitamin deficiency were presented by Drs. Jacob Greenstein, Thad. A. Krolicki, and Raymond E. Stevens.

Dr. Earl F. Kelly, chief of the Pediatric Division, with Drs. Earl R. White and Banice Feinburg, showed cases of streptococcus viridans septicemia, acute lymphatic leukemia, aleukemic leukemia, and demonstrated a dental plate in feeding cases of harelip and cleft palate.

Dr. Raymond F. Hacking, chief of the Eye Division, gave a talk on "Preventing Blindness and Saving Sight," illustrated by motion pictures. Ward rounds, with presentation of interesting cases, were carried on by Dr. Hammond, chief of the Orthopedic Division, with Drs. Herbert E. Harris and Robert T. Henry.

In the Nurses' Home Auditorium, Dr. William B. Cohen demonstrated "The Use of Sulfanilamide in Treating Some Skin Conditions." Dr. Vincent J. Ryan gave a "Lamp-slide Demonstration of a Common Drug Eruption." Under the direction of Dr. John G. Walsh, chief of the Obstetrical Division, Dr. J. Lincoln Turner presented "Anemias of Pregnancy," and Dr. Milton Goldberger, "Sterility —Methods of Investigation." These demonstrations were followed by a surgical dry clinic under the direction of Dr. Frederic V. Hussey, chief of the Surgical Division. Dr. Hussey demonstrated "Fascial Repair of Inguinal Hernia" (illustrated by motion pictures). A symposium on "Postoperative Distension" was given by Drs. William P. Davis, Eliot A. Shaw, and Henry B. Moor.

The X-ray and Radium Department and the Laboratories were open for inspection. The transfusion clinic, under the direction of Dr. Jesse P. Eddy, 3rd, with Drs. Frederick A. Webster and Orland F. Smith, gave demonstrations of the blood bank and of the vacuum citrate method of blood collection.

At 1:30 P. M., a cafeteria luncheon was served in the Service Building.

At the afternoon session, held in the Nurses' Home Auditorium, Dr. John F. Kenney presided. The program follows:

"The Present Status of Peptic Ulcer" (illustrated by Motion Pictures), William F. Rienhoff, Jr., M.D., Associate Professor of Surgery, School of Medicine, Johns Hopkins University.

"Pyelonephritis," Warde B. Allan, M.D., Associate in Medicine, School of Medicine, Johns Hopkins University.

"Bacterial Endocarditis and Syphilitic Heart Disease," C. Holmes Boyd, M.D., Associate in Medicine, School of Medicine, Johns Hopkins University.

"Congenital Heart Disease," John T. King, M.D., Associate Professor of Medicine, School of Medicine, Johns Hopkins University.

At 6:30 P. M., the regular staff dinner was served at the Squantum Club. The occasion was enlivened and those present were mystified by feats of legerdemain performed by Mr. Harry A. Scheer. The Committee on Arrangements: Drs. Earl J. Mara, Stanley Sprague, Edward Foster, Robert T. Henry; Dr. Joseph H. Doll, Secretary.

THE MEMORIAL HOSPITAL

Clinical Pathological Conference, May 10, 1939

Case No. 46893. (R. B.). Female. American. Age: 45. Housewife.

HISTORY: Admitted Feb. 13, 1939 on Surgical Service.

Chief complaint: Pain and distention of abdomen.

Present illness: For the past three weeks, the patient had had recurring attacks of lower abdominal pain, severe enough to keep her in bed during most of this time. Belched frequently during these attacks and felt "blown up." She was seized with severe right lower quadrant pain about five days before entry. This pain finally spread to left lower quadrant and then over entire abdomen. Has not had a bowel movement for the past five days in spite of enemata and Epsom Salts. Three days before entry she began to vomit and has been taking only liquids during this time. Most of the liquids have been vomited. Associated with the pain and vomiting has been a marked distention of the abdomen. No tarry stools.

Past history: No diseases or operations.

Family history: No cancer, tuberculosis, diabetes or mental disease. Parents dead, cause unknown.

Habits: No alcohol, tobacco or drugs.

Marital history: No children.

Regional: Occasional upper respiratory infection. No epistaxis or discharge. Some dyspnea on exertion.

Menses: Periods started at twelve years of age, regular every 28-30 days. No dysmenorrhea, leukorrhea, metro- or menorrhagia.

Physical examination: An extremely obese white 45 year old female, appearing extremely ill. She is markedly dyspneic and is moaning with pain. Her face is flushed and perspiring and she appears very apprehensive. Head, eyes, ears, nose, mouth and neck—no abnormal findings.

Chest: Breasts pendulous. No tenderness or masses.

Heart: Sounds very indistinct due to fat chest wall. Could not decide whether murmurs were present or not, due to weak sounds.

Lungs: Resonant throughout. Normal vocal and tactile fremitus. Scattered moist rales at bases posteriorly.

Abdomen: Markedly distended and tender throughout. The abdominal wall is pendulous and hangs down almost to midthigh, making palpation very difficult, but there is the sensation of a mass in the right lower quadrant and marked tenderness there. There is a hyperresonant note to percussion, particularly in the upper abdomen. No borborygmi heard.

Vaginal: Perineum has good support; marital introitus; no tenderness or masses felt. Palpation not accurate due to extreme obesity.

Extremities: Negative.

Progress note: 2/13/39. Patient improved somewhat after Wagenstein drainage and parenteral fluids consisting of 2000 cc. normal saline by clysis at 4:15 on morning of admission. The 2000 cc. was repeated at 8:30 A. M. It was then decided to operate but the patient went into collapse on the table, her blood pressure began to fall and pulse became weak and almost imperceptible. She was returned to the ward immediately without operation and she received intranasal oxygen plus 800 cc. of 5% glucose and saline by clysis. Coramine was given at 11:50 A. M. She rallied throughout the afternoon. At 1:30 P. M. she received 800 cc. of 5% glucose and normal saline intravenously. At night she sank into a coma from which she could not be aroused. Pronounced dead at 11:59 P. M. On admission at 2:00 A. M. temperature was 101.2, pulse 90, respiration 40, blood pressure 124/70. At 5-6 A. M., temperature 101, pulse 96, respiration 24. At 9:00 A. M., pulse 106, respiration 26.

X-Ray Report: February 13, 1939—Examination of the abdomen in the horizontal and erect position shows a rather marked gas distention of the cecum which was less prominent in the erect posture. There was also a group of markedly dilated loops of small intestine, apparently jejunum or upper ileum. The descending colon and sigmoid as well as the rectum were collapsed. Barium enema studies of the colon were unsuccessful as the patient expelled the opaque mixture on several occasions and a filling only up to the sigmoid could be obtained. The same type of gas distribution and dilation of the bowel was again noted as described above, with less gas at this time in the cecum and somewhat more in the transverse colon.

Conclusions: The findings suggest an intestinal obstruction in the small bowel, apparently in the upper ileum or lower jejunum. There may be a second point of obstruction in the proximal half of the colon.

Laboratory Reports:

Blood Count: 2/13/39. Hgb. 85%; R.B.C. 4,000,000; W.B.C. 13,100; Neutro 75%; Lymph. 23%; L.M. 2%.

Blood Chemistry: 2/13/39. Urea Nitrogen 31.52, Creatinine 2.0, Sugar 266, Cholesterol 200, Chloride 360, mg. per 100 cc. CO2 combining power 67.3%.

Urinalysis: 2/13/39—Amber, reaction acid, albumin +; sugar +; bile ++++; ++++ epi. cells; + leuc.; + hyaline; + fine granular casts.

DR. KENNEY: This case is now open for discussion. The case has been presented principally from a diagnostic standpoint. Just what did this patient have?

DR. HUSSEY: I think this case, from the standpoint of the surgical service, was admitted to the hospital presenting a problem of making a diagnosis

largely on the history of the case rather than the examination after admission to the hospital. In going over the history, we find that this patient had been ill for three weeks with recurring attacks of lower abdominal pain which began and remained on the right side low down in the abdomen and sometime before began to have shifting of that pain. There is another point in the history which I think should be emphasized and that is this: the patient presented severe abdominal pain. I see a note that the patient was given Epsom Salts and repeated enemata for five days in spite of the fact that there was no particular results from it. I think that, under the circumstances, after a while the initial distinguishing symptoms became obscured later on as these cases develop a spreading involvement. Undoubtedly when this patient was admitted to this hospital, she had a pretty definite peritoneal infection and that infection as far as examination is concerned would in many instances obscure the original condition. In spite of X-ray work before and all that, the best that we could do under the circumstances was to make a diagnosis of peritonitis, the underlying cause of which was indefinite, but presumably from the history, it would suggest an acute appendicitis. The case at no time was a good risk enough to warrant operation because the patient was practically moribund when she came in. It went along for several hours but it was at no time in a condition to operate and expect a satisfactory result. Of course, the point I wish to emphasize is that here was a woman who was treated outside for three weeks with recurring attacks of right lower quadrant pain and finally going into a severe attack and being treated with Epsom Salts and enemata for the condition.

Dr. Moor: As I listened to this case, it seemed to be that it was obviously a blind case to handle from the beginning and one can only offer guesses for diagnosis. My first guess would be appendiceal abscess followed by peritonitis and general peritonitis, or it might be due to a volvulus or probably a mesenteric thrombosis.

Dr. Smith: I think that besides the appearance that she presented on admission the laboratory work is interesting in a woman as sick as she was to have a white count of 13,000 and 75% neutrophiles. The urea nitrogen was definitely elevated. The creatinine I would call a little bit up and a blood sugar of 266 and cholesterol of 200 with a one plus urinary sugar. I agree that she probably had an acute appendix followed by a perforation but I also want to feel that the terminal result was due to diabetes and uremia.

Dr. Farrell: Did she have glucose?

Answer: It states "parenteral fluids."

Dr. Kenney: Here is mentioned parenteral fluids, most likely it was glucose and that naturally would give a blood sugar. Still that patient could be a diabetic with a high threshold which would give us just that picture.

Dr. Smith: I was assuming that the blood chemistry was done initially.

Dr. Benjamin: This case was very interesting from this standpoint. The X-ray examination showed a pathological distention of the jejunum and possibly the upper ileum with gas, and in addition, considerable distention of the cecum. Now the roentgen diagnosis of intestinal obstruction brings up an interesting point. Is this obstruction mechanical or paralytic? This differential diagnosis is difficult enough in the large bowel where we can give an enema but in the small intestine we can make no differential diagnosis with X-ray. I think that it is due to a mechanical obstruction.

We had a case recently where it was felt at first that the obstruction in the colon was on an organic basis perhaps malignancy, congenital band, but on barium enema examination we were able to get by the point and fill up to the area of obstruction. We don't usually in this type of a case give barium by mouth but it has been done in some clinics by giving ½ oz. to see where it stops. My feeling is that obstruction in the small bowel is dynamic. In other words, I think that these cases of mechanical obstruction are surgical. In the small intestine, we are pretty well limited in X-ray.

Dr. Hussey: I did not wish to limit myself to the preoperative diagnosis of acute appendicitis. I tried to bring out the case for a positive diagnosis, as the patient had been acutely ill for several days and presented the symptoms of general peritonitis. This case was very much distended and we got quite a bit of information from the roentgen examination. On the other hand it is pretty difficult to tell whether we have a mechanical obstruction or whether we have a distention from the paralytic ileus in these late stages. I think that Dr. Benjamin will agree with me when I say that we have had occasion to change our opinion several times thinking that we had a mechanical obstruction and finding an ileus from toxemia, and cases where we thought we had a toxic ileus and find evidently a mechanical ileus. The picture changes so much that it is very difficult in the late stages to determine the type. In the presence of a late peritonitis, it is very difficult to determine the underlying cause from examination of the patient at the time. We might easily have found a volvulus, as Dr. Moor said, or a mesenteric thrombosis, although the history would not suggest that to me; possibly it might to himself, and we might have any number of conditions that would present the

same picture. The only point I had in mind when I mentioned appendicitis was the recurrent attacks of pain in the right lower quadrant. I think that might be the diagnosis in a large number of cases.

Dr. Kenney: Dr. Healey sent the patient in but do not blame him for the treatment as he had not been treating the case for those three weeks.

Dr. J. P. Healey: I saw the patient at midnight but she had been seen by two other doctors and had been followed along for three weeks. What misled them was that four or five days previous to her death, she was walking around and persisted in doing the work as sick as she was and they thought it was gas but when I saw her, it was very evident that it was an obstruction.

Dr. Kenney then read the post mortem findings.

Final Diagnosis: Intestinal Obstruction, Toxemia, Gangrenous Bowel, General Peritonitis. He also stated that the possibility of ruptured Meckel's, as the obstruction was less than two feet away from ileocecal junction, cannot be entirely ruled out. The bowel was so gangrenous that the tissue could not be identified under the microscope. Sections showed caseation necrosis.

Conference then adjourned.

OBITUARY

JOHN LOVELL SPRAGUE, M.D.

Dr. John Lovell Sprague, a well-known general practitioner in this city, died suddenly at the home of a patient on April 25, 1939. He had practiced medicine in Providence for 44 years.

Dr. Sprague was born June 16, 1870, the son of John Lovell and Sarah Maria (Peck) Sprague. One of his ancestors was Rufus Sprague, an early settler in Rhode Island.

After preliminary education in the public schools, he entered Harvard and graduated from there with the degree of M.D. in 1893. Following a year of post-graduate study, he settled in Providence.

On April 2, 1902, Dr. Sprague married Miss Susan Smith Stone. Mrs. Sprague died three years ago.

Dr. Sprague was a member of the Harvard Medical School Alumni Association, the Providence Medical Association, the Rhode Island Medical Society and the American Medical Association.

He also showed an interest in non-medical organizations, holding membership in Masonic bodies and the Knights of Pythias. For seven years he was a Republican member of the Providence School Board. Dr. Sprague served for many years as a vestryman in the Church of the Epiphany.

He is survived by a sister, Mrs. Sarah Lulu Hazard of Providence, three nieces and a nephew.

J. E. Mowry, M.D.
C. R. Doten, M.D.

MEMORIAL HOSPITAL

December 13, 1939 — 11:30 A. M. — Nurses' Home Auditorium. Lecture on "Reduced Temperatures as an Adjunct in Cancer Therapy" by Lawrence W. Smith, M.D., Professor of Pathology at Temple University, Philadelphia.

Schedule Beginning December 1, 1939

Medical Service

Medical Ward Rounds at 11:00 A. M. every Saturday.

Medical Symposium on the last Friday of each month in the Nurses' Home Auditorium.

Surgical Service

Surgical Ward Rounds at 11:00 A. M. every Wednesday.

Tumor Clinic

The first and third Thursdays of each month at 10:00 A. M.

Urological Service

Ward Rounds at 12:00 Noon on the first and third Mondays of every month.

Medical Staff Meetings

Meeting of the entire staff on the second Wednesday of each month at 1:00 P. M.

Orthopedic Service

Ward Rounds at 11:00 A. M. every Saturday.

Obstetrical Service

Conference on the last Friday of each month, at 12:00 Noon.

Pediatric Service

Ward Rounds and Discussion of Cases at 12:00 Noon every Thursday.

Ear, Nose and Throat Service

Ward Rounds and Discussion of Cases at 10:30 A. M. on the second Wednesday of each month.

Members of the staff and physicians who are not on the staff are cordially invited to participate in the various activities such as ward rounds. The above schedule and subsequent ones will be printed in the Journal so that you may be acquainted with the various dates. If the visiting doctors will present themselves at the Information Desk in the Main Hospital, they will be directed to the various departments.

RECENT BOOKS

An Introduction to Sociology and Social Problems. A Textbook for Nurses. By Deborah MacLurg Jensen, R.N., B.Sc., pp. 341, Cloth, $2.75. The C. V. Mosby Company, St. Louis, 1939.

Intended primarily as a text for student nurses it brings to the physician who hasn't read such a text since his college days the most modern concepts of practical sociology. There are numerous excerpts from leading authorities and discussions of the most recent methods of social reorganization. The fundamental concepts of man's social nature, personality, collective behavior, etc., are presented in attractive form while the ever-present problems of those handicapped economically, physically, mentally and socially are thoroughly studied from the particular viewpoint of the nurse.

Clifton B. Leech, M.D.

Eye, Ear, Nose and Throat Manual for Nurses. By Roy H. Parkinson, M.D., F.A.C.S., Fourth Edition, pp. 243, with 59 illustrations, Cloth, $2.25. The C. V. Mosby Company, St. Louis, 1939.

Dr. Parkinson has recognized in this manual the need for a concise text dealing with the nursing aspects of eye, ear, nose and throat cases. It is intended to give the student nurse a general idea of the subject and enable her to follow the doctor's instructions intelligently.

He first discusses the anatomy and physiology of the organs, together with the diseases and treatments peculiar to each. Part II takes up the surgical procedures used, and Part III is devoted to those problems met by the public health nurse.

The illustrations of such procedures as packing the posterior nares and the care of tracheotomy tubes and incisions, also those of the various instruments used, should prove of great value.

Mildred G. Peirce, R.N., B.S.

The Vitamins—A Symposium Arranged Under the Auspices of the Council on Pharmacy and Chemistry and the Council on Foods of the American Medical Association. Imitation leather. Price, $1.50 postpaid, pp. 637. Chicago: American Medical Association, 1939.

So much information has become available about the vitamins, that it is difficult even for experts to keep up with the literature. The present volume is a welcome compendium of authoritative information about these accessory food factors. There are discussions of the chemistry, physiology, pathology, pharmacology and therapeutics, methods of assay, food sources and human requirements of each of the important vitamins. The volume is composed of thirty-one chapters written by experts, and is published under the auspices of the Council on Pharmacy and Chemistry and the Council on Foods of the American Medical Association.

This book should prove to be an indispensable volume for the library of every physician.

Operative Orthopedics. By Willis C. Campbell, M.D., Memphis, Tenn., pp. 1154, with 845 illustrations including 4 color plates. Cloth, $12.50. The C. V. Mosby Company, 3525 Pine Boulevard, St. Louis, 1939.

Dr. Campbell has fulfilled a long felt need in the form of his recent text book, "Operative Orthopedics." No single text book could adequately cover the entire field of Orthopedics and with this idea in view the author has fairly well confined his book to surgery and does not attempt to describe conservative means of treatment. The result is a veritable gold mine of information concerning orthopedic surgery—not only for the orthopedist but for the general surgeon as well. The introductory chapters describe the pathology, apparatus, and technique essential to an understanding of the field and follows with an excellent chapter describing surgical approaches. Following this introduction, the author presents a complete up-to-date description of the many operative procedures and accompanies this description with excellent illustrations. In many cases Dr. Campbell evaluates the various procedures frankly and without apology. The book is well deserving of place in every surgeon's library and is probably the best text book of its kind now available.

Ernest D. Thompson, M.D.

The Rockefeller Foundation, Annual Report, 1938, pp. 515, Paper, 49 West 49th Street, New York, 1939.

This volume of 380 pages, plus a report of the Treasurer and an index, constitutes an illuminating and informative survey of the varied and important activities of the Foundation. The detailed reports of the Directors of the International Health Division, of the Medical Sciences, the Natural Sciences, the Social Sciences, the Humanities, the China Program, and the President's Review are worth the reading time of every physician.

The descriptive reports of work done in the Natural and Medical Sciences contain many fascinating and instructive scientific truths, of practical as well as academic interest, uncovered in some instances by most ingenious experiments and devices. Of local interest is the report of the Research Unit of the Emma Pendleton Bradley Home which has been conducting investigations by means of the electroencephalographic method.

Clifton B. Leech, M.D.

Psychopathia Sexualis, A Medico-forensic Study. By Richard von Krafft-Ebing, M.D. With Introduction and Supplement by Victor Robinson, M.D., Professor of History of Medicine, Temple University School of Medicine. Pp. 626 XIII, Cloth $3.00, Pioneer Publications, Inc., 1270 Sixth Avenue, New York City, 1939.

This is a new printing of Krafft-Ebing's classic work, made from the plates of the twelfth English edition. Dr. Robinson has written an introduction and a supplement, covering the subjects, Psychoanalysis, Endocrinology, and Censorship.



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*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

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SQUIBB BIOLOGICAL LABORATORIES

Establishment of a new laboratory for the study of filterable virus diseases, in the treatment and prevention of which science is believed to be at the threshold of an important advance, is announced by the Squibb Biological Laboratories.

Dr. Raymond C. Parker, biologist of the Rockefeller Institute for Medical Research, and for many years an associate of Dr. Alexis Carrel, has been appointed to head the laboratory, which will operate as a unit of the Biological Division of E. R. Squibb and Sons at New Brunswick, N. J. The new building is a continuation of a program of expansion which began in the Fall of 1938 with the dedication to pure science of the $750,000 laboratory of the Squibb Institute for Medical Research.

The new virus laboratory is housed in a specially constructed building, and is equipped for work with chick embryos and tissue culture, two of the techniques for work in this field. The actual working quarters consist of a large general laboratory equipped with every facility for chemical and histological work, a general preparation room for washing, drying, packing, and storing the various materials that are used, two special culture and operating rooms provided with filtered ventilation, a spacious incubator room, an animal preparation room, a bleeding room, and ample animal quarters.

The arrangement of the rooms is such that the air of the culture suite proper is protected at all times from the air of the general laboratory and office quarters on the one side, and of the animal room on the other. It is also possible for visitors to observe every step of the work in progress without entering any of the various rooms of the culture suite.

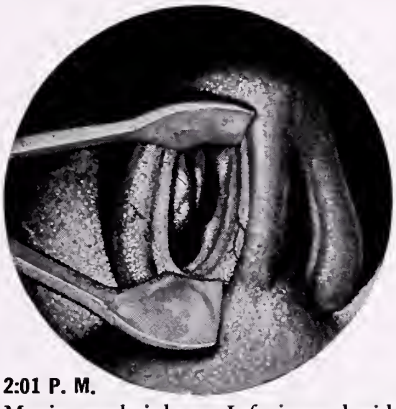
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Case History: F. O'B. Age 23, male, white. Worker in chromic acid plant. Complained chiefly of earache and head stoppage. Observed at Nose and Throat Clinic of a Philadelphia hospital.

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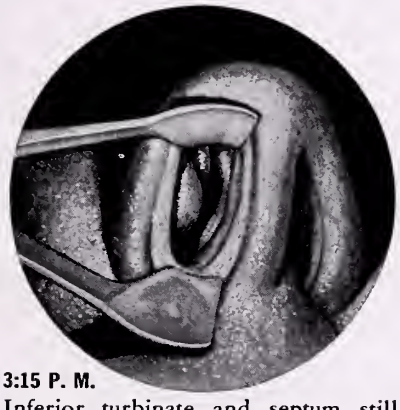


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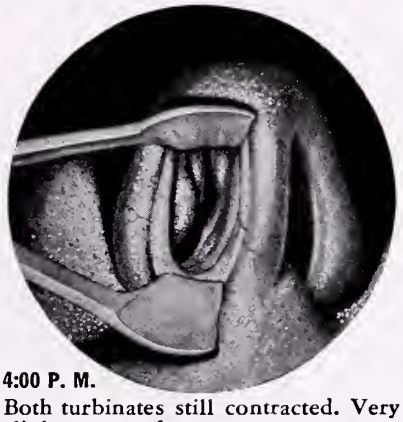


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FISKE FUND PRIZE ESSAY
1940

The Trustees of the Fiske Fund announced at the annual meeting of the Rhode Island Medical Society, held in June 1939, that they proposed the following subject for the year 1940.

"Fractures of the Femur—Results of Treatment Compiled from Experience or Hospital Records."

For the best essay on the subject worthy of a premium they offer the sum of two hundred and fifty dollars ($250.00). Every competitor for the premium is expected to conform with the following regulations, namely:

To forward to the secretary on or before the first day of May 1, 1940, free of all expense, a copy of his dissertation with a motto thereon, and also accompanying it a sealed envelope having the same motto, inscribed on the outside, and his name and address within.

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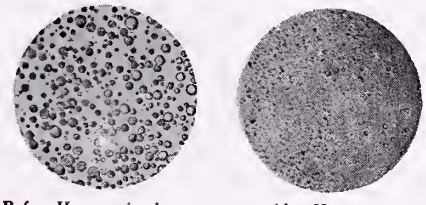
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One of these steps is to subject the modified milk to the process of homogenization. In this process the milk is forced by a high pressure pump through very fine passages in which friction and shearing action break up the fat globules as shown by the following photomicrographs.

COW'S MILK FAT GLOBULES



Before Homogenization *After Homogenization*

Any difficulties in digestion caused by the physical characteristics of the fat of cow's milk are thus obviated by this process.

Because of this reduction in the size of the fat globules which renders the fat of cow's milk more readily digestible, Lactogen contains the full amount of fat that a proper formula for infants should have. Further, this is entirely milk fat, not vegetable or any other substitute fat. The infant's need for milk fat is, therefore, fully met with this one easily digestible food.



No laity advertising. No feeding directions given except to physicians.

For free samples of Lactogen and literature, mail your professional blank to Lactogen Dept.

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If they could talk, Council Seals would say:

"When you see one of us on a package of medicine or food, it means first of all that the manufacturer thought enough of the product to be willing to have it and his claims carefully examined by a board of critical, unbiased experts . . . We're glad to tell you that this product was examined, that the manufacturer was willing to listen to criticisms and suggestions the Council made, that he signified his willingness to restrict his advertising claims to *proved* ones, and that he will keep the Council informed of any intended changes in product or claims . . . There may be other similar products as good as this one, but when you see us on a package, *you know*. Why guess, or why take someone's self-interested word? If the product is everything the manufacturer claims, why should he hesitate to submit it to the Council, for acceptance?

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AIR RAID ON S.M.A.

Just Before the Can is Sealed . . .

To prevent oxidation or change in the physical or chemical composition of S.M.A., the atmosphere is exhausted from the container and is replaced with nitrogen which keeps the contents — S.M.A. — fresh and sweet in any climate.



The physical and chemical character of S.M.A. is always the same, providing a vitamin A, B_1, and D activity in each feeding that is constant throughout the year.

S.M.A. feedings are always uniform whether they are prepared in Maine or California.

NORMAL INFANTS RELISH S.M.A. — DIGEST IT EASILY AND THRIVE ON IT!

S.M.A. is a food for infants — derived from tuberculin tested cows' milk, the fat of which is replaced by animal and vegetable fats including biologically tested cod liver oil; with the addition of milk sugar and potassium chloride; altogether forming an antirachitic food. When diluted according to directions, it is essentially similar to human milk in percentages of protein, fat, carbohydrate and ash, in chemical constants of the fat and in physical properties.

ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods

S.M.A. CORPORATION • 8100 McCORMICK BOULEVARD • CHICAGO, ILLINOIS

HOW MUCH SUN

Does the Baby Really Get?

THIS BABY has been placed in the sunlight. (1) The mother discovers the baby is blinking, so she promptly shields its eyes and much of its face from the light. (2) Since the baby's body is covered, the child will then be getting only reflected light or "sky-shine" which is only 50% as effective as direct sunlight as an antiricketic agent (Tisdall). (3) Even if the baby were exposed nude, it has never been determined how much of the ergosterol of the skin is synthesized by the sun's rays (Hess). (4) Time of day also will affect the amount of sunshine or sky-shine reaching this baby's face. At 8:30 A. M., average loss of sunlight, regardless of season is over 31% and at 3:30 P. M. is over 21%. (5) Direct sunlight, moreover, is not always 100% efficient. U. S. Weather Bureau maps show that percentage of possible sunshine varies in different localities, due to differences in meteorological conditions. (6) In cities, smoke and dust, even in summer, are other factors reducing the amount of ultraviolet light.



While Oleum Percomorphum cannot replace the sun, it is a valuable supplement. Unlike the sun, it offers measurable potency in controlled dosage and does not vary from day to day or hour to hour. It is available at any hour, regardless of smoke, season, geography or clothing. A rich source of vitamins A and D, Oleum Percomorphum can be administered in *drops*, which makes it an ideal year-round antiricketic. Use the sun, too.

•

FOR GREATER ECONOMY, the 50 cc. size of Oleum Percomorphum is now supplied with Mead's patented Vacap-Dropper. It keeps out dust and light, is spill-proof, unbreakable, and delivers a uniform drop. The 10 cc. size of Oleum Percomorphum is still offered with the regulation type dropper.



OLEUM PERCOMORPHUM

Ethically Marketed — Not Advertised to the Public

MEAD JOHNSON & COMPANY, EVANSVILLE, INDIANA, U. S. A.

Please enclose professional card when requesting samples of Mead Johnson products to cooperate in preventing their reaching unauthorized persons.

The New York Academy of Medicine

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